

EPA Region 5 Records Ctr.



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Expanded Site Inspection
Final Report

Bill's Excavating
Lockport, Illinois
ILD 980 704 845

February 1997

Prepared for:
U.S. Environmental Protection Agency
under Alternative Remedial Contracting Strategy (ARCS)
Contract 68-W8-0064, Work Assignment 33-5JZZ
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1.0 Introduction

On February 4, 1993, the Alternative Remedial Contracting Strategy (ARCS) contractor was authorized by the U.S. Environmental Protection Agency (USEPA) Region V to conduct an expanded site inspection (ESI) of the Bill's Excavating site in Cook County, Illinois.

On July 25, 1980, USEPA received a complaint on their Hazardous Waste Hotline from a hiker who reported strong chemical odors, hundreds of drums, and a large body of water in a dump area that was completely black and surrounded with dead vegetation (USEPA 1980a). USEPA personnel contacted a representative of the Metropolitan Sanitary District of Greater Chicago (MSDGC) located near the site and requested a reconnaissance, which was performed on July 29, 1980. The site was entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) in July 1980, when USEPA received information from the MSDGC site reconnaissance. The MSDGC reconnaissance confirmed the presence of 200 drums. About half of the drums contained oily residue and other tar-like wastes. The Illinois Environmental Protection Agency (IEPA) later conducted a site visit on August 19, 1980, to confirm site conditions (IEPA 1980).

The facility received its initial Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) evaluation in the form of a preliminary assessment (PA) report completed by IEPA personnel on February 28, 1984. Field Investigation Team (FIT) contractor personnel completed a site inspection (SI) report on December 5, 1985. USEPA also completed a site inspection prioritization of the Bill's Excavation site on November 18, 1991. The sampling portion of the ESI was conducted during November 7 through November 9, 1994, when a field team collected 12 soil samples, 5 sediment samples (one analyzed as high concentration sample), 2 onsite waste samples, and 3 residential well samples.

USEPA stated the purposes of the ESI in a directive outlining site inspections performed under CERCLA. The directive states:

The objective of the expanded SI is to provide documentation for the Hazard Ranking System (HRS) package to support National Priority List (NPL) rule making. Remaining HRS information requirements are addressed and site hypotheses not completely supported during previous investigations are evaluated. Expanded SI sampling is designed to satisfy HRS data requirements by documenting observed releases, observed contamination, and levels of actual

contamination at targets. In addition, investigators collect remaining non-sampling information. Sampling during the expanded SI includes background and quality assurance/quality control samples to fully document releases and attribute them to the site. Following the expanded SI, USEPA site assessment managers assign the site a priority for HRS package preparation and proposal to the NPL.

USEPA Region V directed the ARCS V contractor to determine whether emergency removal action is required at the site to remediate an immediate human health or environmental threat. Exposed wastes were identified to the USEPA in the form of a letter report sent after the ESI site reconnaissance visit; however, no emergency removal action requirements were identified.

2.0 Site Background

2.1 Introduction

This section includes information obtained during the ESI and from reports of previous site activities.

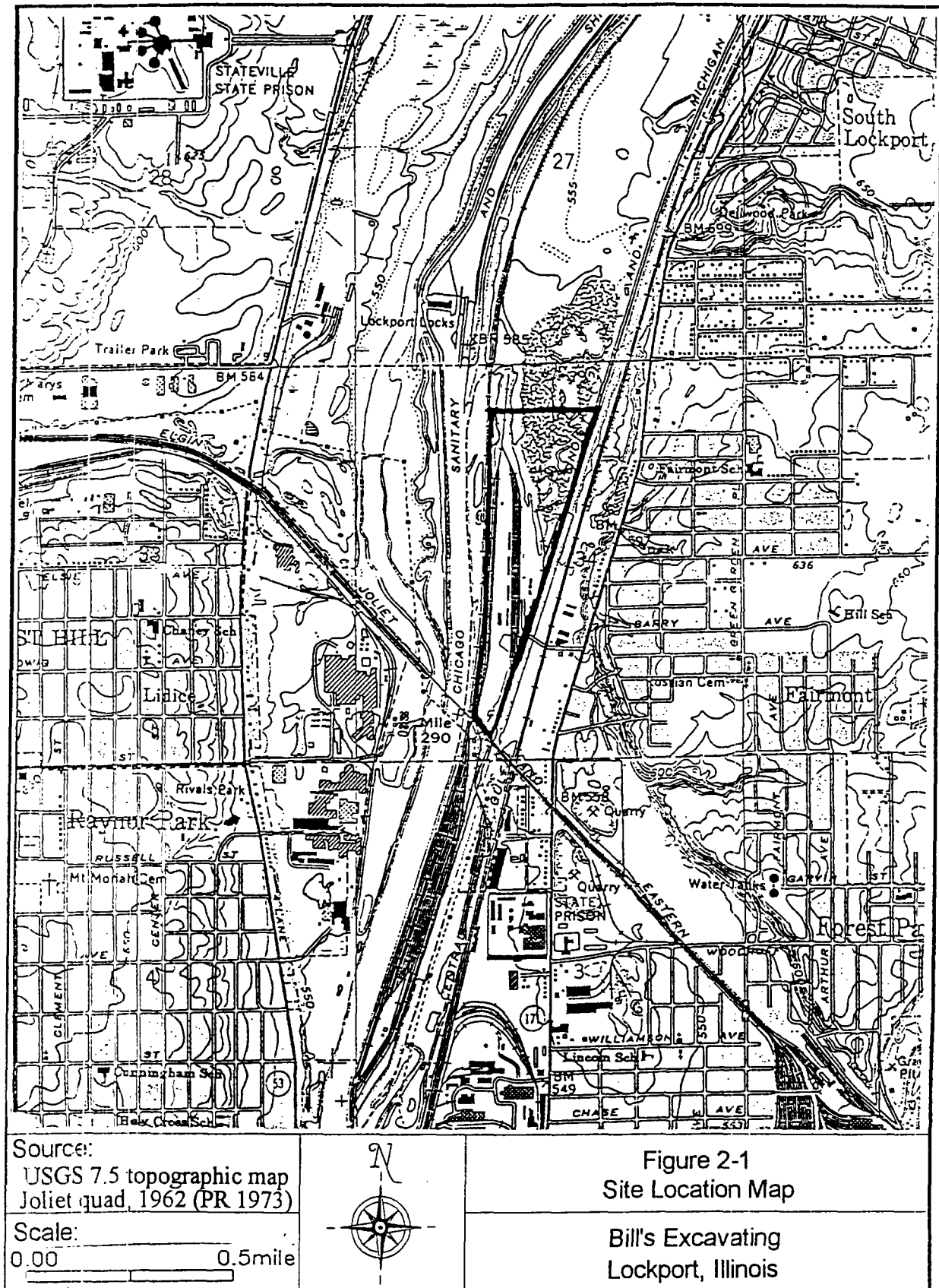
2.2 Site Description

Bill's Excavating is a salvage operation located on about 64 acres between the Illinois and Michigan (I&M) Canal and the Chicago Sanitary and Ship Canal/Des Plaines River in Lockport, Illinois. The property was formerly a U.S. Steel coking facility that ceased operations around 1930. The site is located in the western half of Section 34, Township 36 North, Range 10 East of the Third Principal Meridian (U.S. Geological Survey 1973). Figure 2-1 is a site location map. Figure 2-2 is a site sketch.

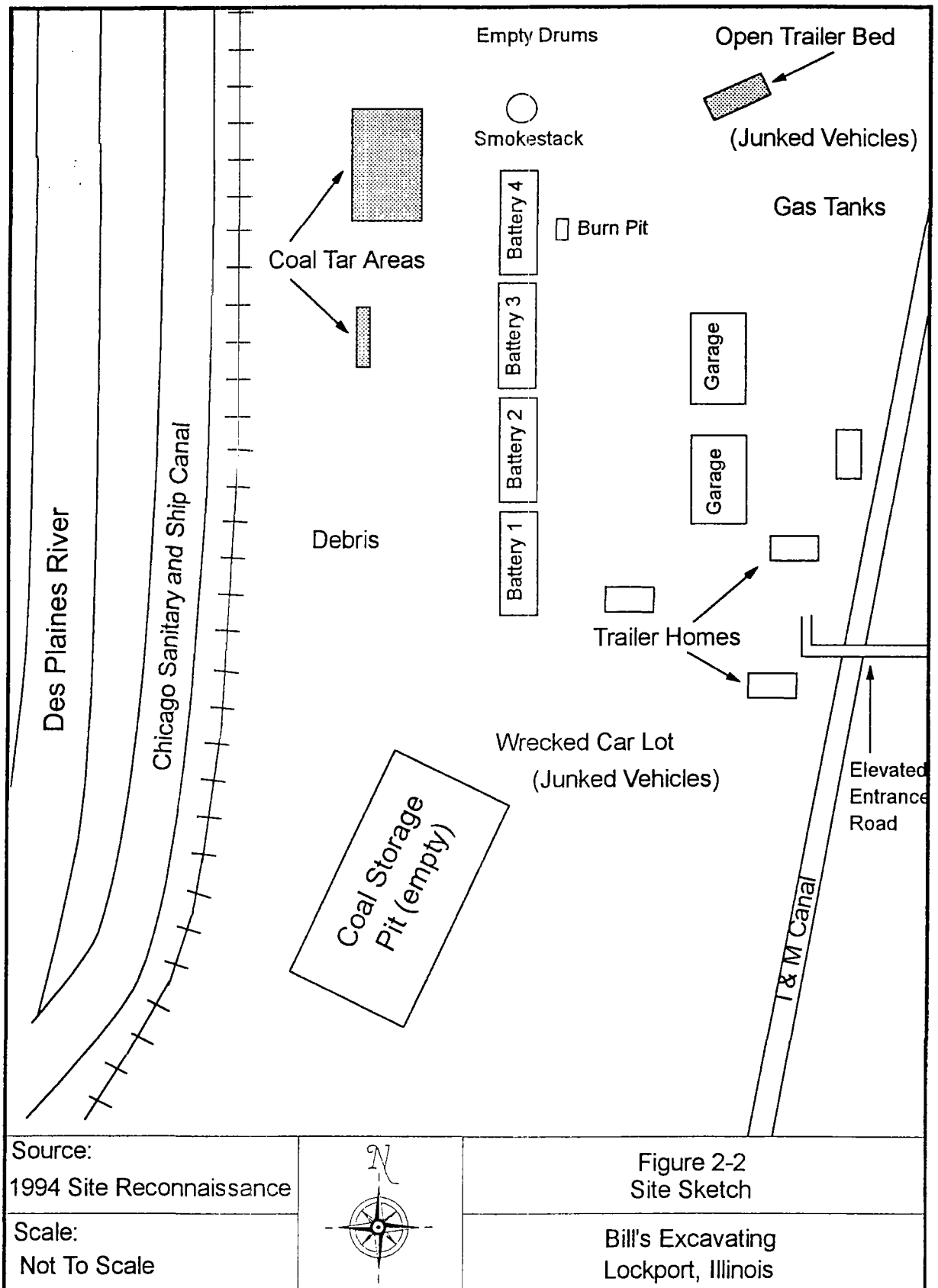
The site is relatively flat unpaved surfaces with areas of thick vegetation and exposed dirt surfaces. Bill's Excavating, owned by William Schopf, Sr., is onsite, along with several occupied trailer homes.

A salvage operator rents the south part of the site to store wrecked cars. Tires are piled up along the wrecked cars. Northwest of the wrecked car lot are remnants (foundations and concrete pads) of abandoned buildings and storage areas that are deteriorating in a heavy overgrowth of vegetation. An empty coal storage pit is located in the south part of the site. Railroad ties, concrete debris, and coal or coal-like ash litter the south part of the site. An old railroad bridge with tracks runs parallel to the site, along the canal. Track remnants are west of the coal storage area. The south part of the site is generally covered with vegetation and trees.

Four old brick "battery" structures from U.S. Steel coking operations are in the mid-section of the north part of the site. Each structure is about 25 feet tall, 30 feet wide, and 100 feet long. The site owner occasionally salvages bricks for construction use from these old batteries. West of the two northernmost battery structures are a concrete platform and a graded area; both are mostly covered with coal tar-like material. Some coal-tar material was observed dripping off the concrete platform (about 20 feet wide, 50 feet long, and 3 feet high). Patches of the coal tar-like substance exist throughout the northwest part of the site. A smoke stack is north of the row of batteries. Numerous empty 55-gallon drums are north of the smoke stack. A few large underground storage tanks, presumed to be empty gasoline tanks, are



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laying on the ground in areas north and east of the onsite smoke stack. During the ESI reconnaissance, a waste pit filled with garbage and burned wood was observed west of the northernmost battery; however, this area was covered with dirt/fill during the ESI sampling trip.

An open trailer bed filled with drums is in the site's northeast quadrant. The drums have a resin material, some of which was observed to be dripping from the trailer. Junked cars are located in the area where the open tractor trailer was observed.

Several trailer homes are near the Lockport Road site entrance, in the central part of the site's eastern quadrant. At least four trailer homes are occupied. North of the trailer homes is a renovated building serving as a garage for the repair of Bill's Excavating trucks. A second garage or storage shed structure is north of the trailer homes.

Within 4 miles of the site, land use is primarily commercial and industrial, with few residential areas. Appendix A contains a 4-mile radius map and a 15-mile downstream surface water routing map for the Bill's Excavating site.

2.3 Site History

The IEPA investigated the site in 1973 in response to complaints that extensive open dumping of primarily general refuse was occurring. In 1973, Iris Development Company of Chicago owned the property. In 1974, T.P.G. Enterprises of Lockport, Illinois, purchased the property and proceeded to clean it up. By 1976, site conditions had improved (IEPA 1984).

In 1980, the USEPA investigated the site in response to a tip from the Cook County Metropolitan Sanitary District concerning abandoned drums. During the USEPA inspection, about 100 drums were found; some were leaking a resinous, tarry substance. The USEPA also found a 400-cubic-foot pile of coal tar, coal tar in an old tar tank, and coal tar and oil residue on top of sediment tanks in the old U.S. Steel washing and cooling building. The USEPA submitted an investigation report to the IEPA in Autumn 1980 (USEPA 1980b).

After receipt of the USEPA report, the IEPA contacted the current site owner, Bill Schopf Sr. Mr. Schopf informed the IEPA that the drums had been taken to American Grading Landfill in McCook, Illinois, by Mr. Schopf's trucks. The IEPA inspected the site on January 8, 1981, and found that some drums were still onsite. The IEPA inspection reports do not mention coal tar wastes.

In February 1984, the IEPA conducted a potential hazardous waste site PA, which assigned a medium priority to the site (FIT Contractor 1985). This priority was assigned because residual coal tar wastes from the U.S. Steel coking operations were onsite and a previous site owner may have dumped chemicals onsite.

A USEPA FIT contractor conducted a site inspection on July 31, 1984. This inspection revealed an open trailer containing drums that had leaked a rubbery, solidified material on the ground. Drums in the trailer are believed to be the drums that were previously reported as removed from the site. Also during the inspection, the previously mentioned coal tar pile was located. Reportedly, onsite observations suggested that some coal tar was migrating away from the pile. On July 16, 1985, a follow-up inspection, including sampling, was done. Four onsite soil and two well samples were collected. The four samples detected elevated concentrations of polyaromatic hydrocarbons, other volatile organic compounds, and inorganic compounds (FIT Contractor 1991). Photographs taken during the July 1984 site inspection showed barrels in the open trailer, rubbery waste from the barrels solidified on the outside of the trailer, a "tar pile at the northern section of the site," "some liquid tar" near the side of the tar pile migrating from the pile, and "liquid tar which is bubbling up from underneath the new fill." In addition to the tar pile and liquid tar observed on the ground and bubbling up from the ground, tar waste was also reportedly observed "in three shallow tanks in the basement of the old washing and cooling building."

2.3.1 Operational History

The Bill's Excavating site is located on property that was formerly a U.S. Steel coking facility that ceased operations around 1930. Bill's Excavating does not conduct hazardous wastes operations; however, remnants of several structures from the coking facility and some hazardous materials are still onsite. Scrap piles; rusted machinery; wrecked cars; and a variety of drums, tanks, and vessels are scattered across the site, uncontained and exposed to the environment. Onsite wastes of primary interest include the coal tar layer spread over a concrete foundation; patches of coal tar found where a building had recently been leveled; and drums seen in an open trailer, leaking a resinous material that had solidified on the back of the trailer. A burn pit filled with ashes and unburned household waste was observed near one coke battery during the ESI reconnaissance visit; later this area was covered by the

owner/operator. Purportedly, the pit was used to incinerate domestic wastes generated by onsite trailer homes.

2.3.2 Summary of Onsite Environmental Work

The site was entered into the CERCLIS in July 1980. IEPA conducted a PA in February 1984. FIT contractor personnel completed an SI in December 1985. USEPA completed a site inspection prioritization in November 1991. ESI sampling activities occurred in November 1994. Exposed tar and coal tar-type wastes have been identified onsite during the site assessment activities described previously. In Summer 1995, IEPA conducted sampling. IEPA is considering state-lead corrective action or emergency removal actions for the Bill's Excavating site.

2.4 Applicability of Other Statutes

The site is not permitted under the Resource Conservation and Recovery Act (RCRA). Bill's Excavating has not been identified as a RCRA waste generator nor a RCRA treatment, storage, or disposal facility. However, state RCRA regulators are assessing possible RCRA-related violations at the facility.

3.0 Site Inspection Activities and Analytical Results

3.1 Introduction

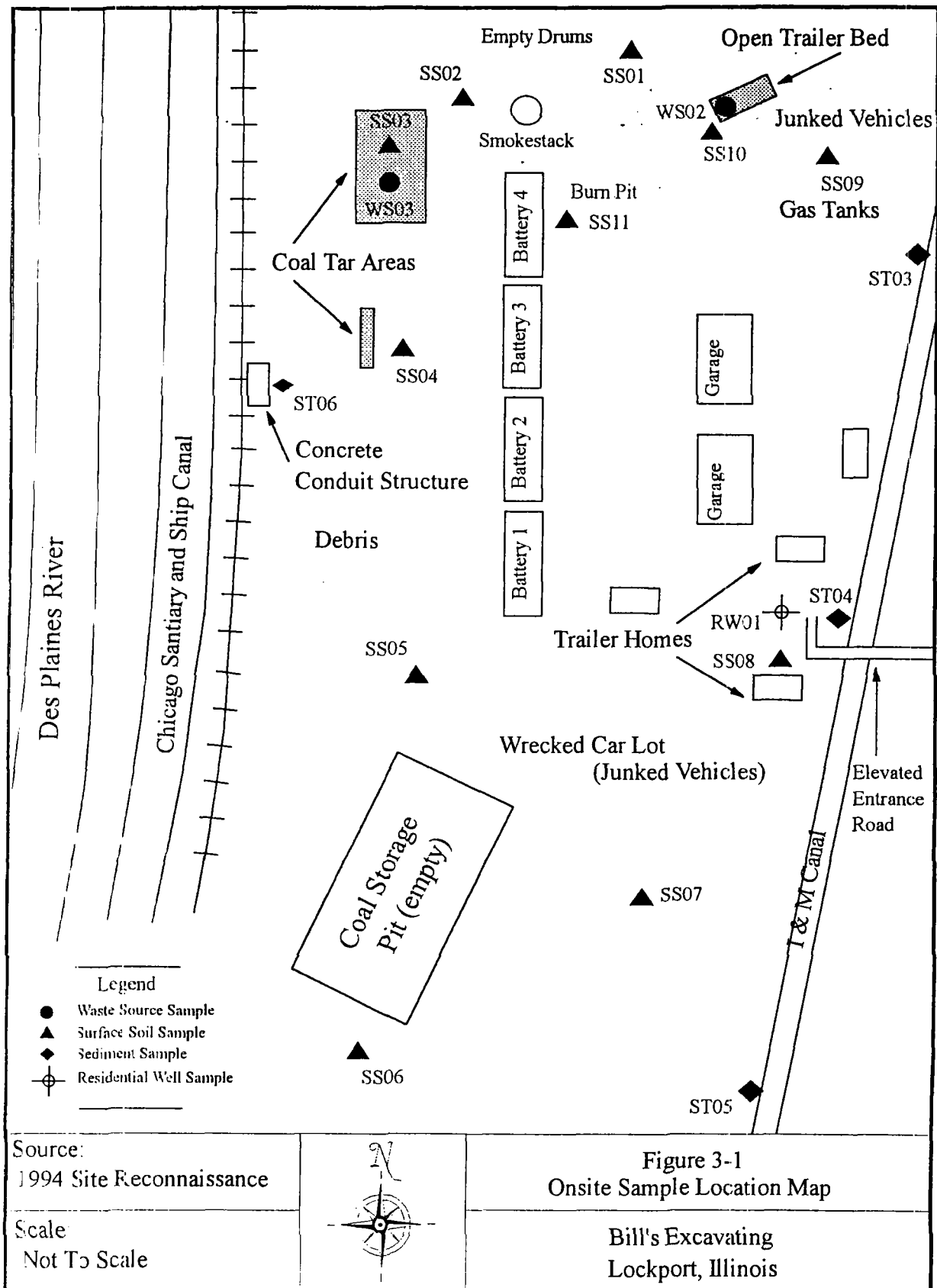
This section outlines observations of site conditions and operations, sampling activities, and analytical results from the ESI conducted at the Bill's Excavating site. Sampling activities were conducted in accordance with the USEPA approved quality assurance project plan (QAPjP), dated September 27, 1991. No split samples were collected. Sample jars were sealed, labeled, packaged, and transported to USEPA Contract Laboratory Program (CLP) participant laboratories. Figure 3-1 shows onsite sampling locations, and Figure 3-2 shows offsite sampling locations. Table 3-1 summarizes sample descriptions and locations. Table 3-2 identifies CLP laboratories used for chemical analysis of ESI samples, listed by media sampled and category of analysis performed.

USEPA CLP participant laboratories analyzed ESI samples for organic and inorganic substances contained on the USEPA Target Compound List (TCL) and Target Analyte List (TAL). Two soil samples were analyzed for dioxins. Appendix B lists TCL, TAL, and dioxin compounds. Appendix C summarizes ESI analytical data. Appendix D contains photographs of site conditions and sampling locations. Accompanying each photograph is a description of the subject of the photograph and other information, including photograph number, site name, sample identification (if applicable), direction of photograph, and date and local time when the photograph was taken. Appendix D also contains a sketch that shows the approximate location and direction of each photograph.

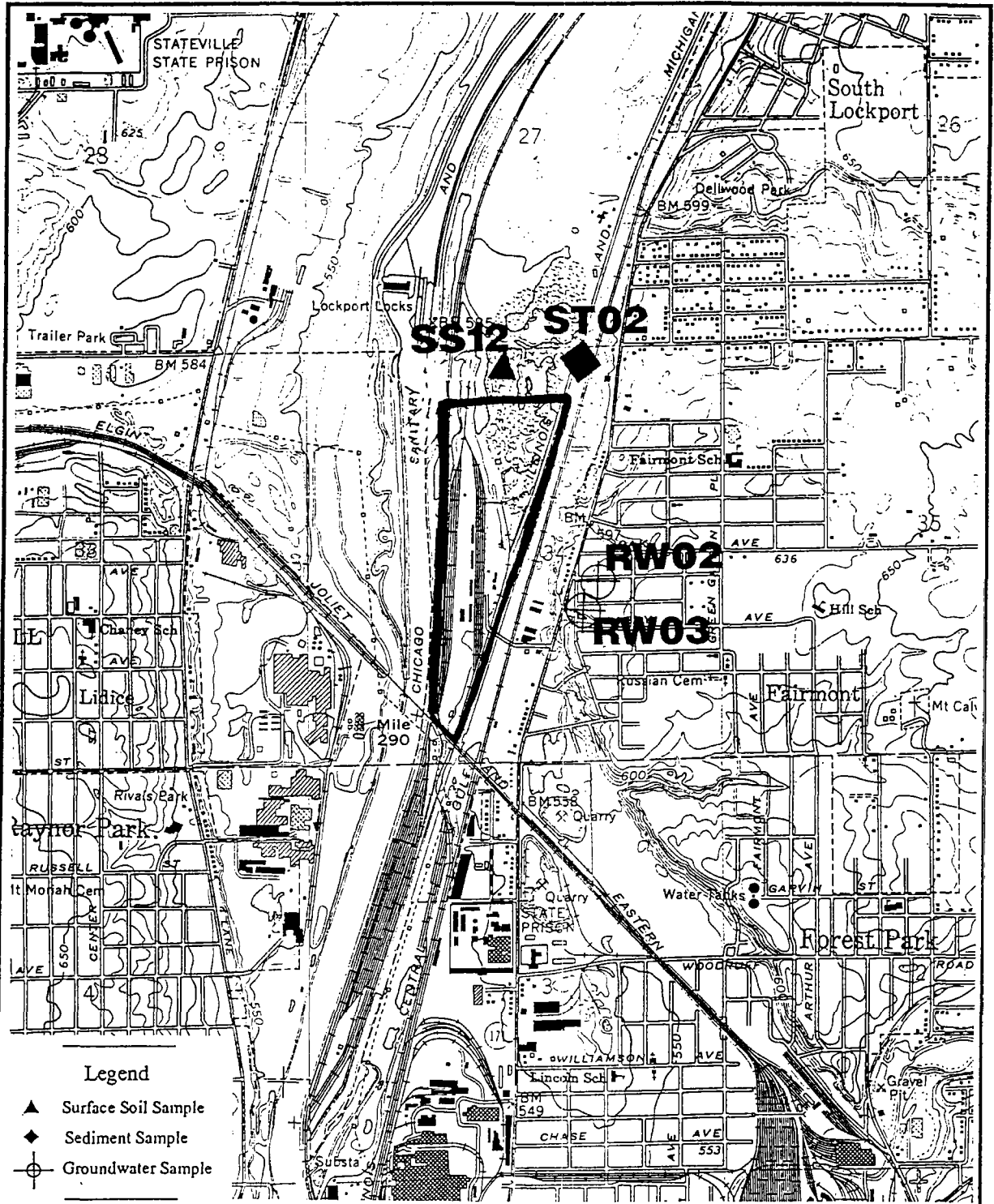
Reusable sampling and personal protective equipment (PPE) were decontaminated before transport offsite. Disposable sampling and PPE items were discarded in accordance with procedures outlined in the ESI project work plan and QAPjP.

3.2 Site Reconnaissance

The ARCS V contractor conducted a reconnaissance visit at the Bill's Excavating site on May 12, 1994. Site owner, Mr. Bill Schopf Jr., was present. An elevated road leading from Lockport Road onto the property provides site access. Four occupied trailer homes are onsite and provide housing for approximately twelve people. An onsite drinking well serves these residences. Culligan Water Softening



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Source:
USGS 7.5 topographic map
Joliet quad, 1962 (PR 1973)

Scale:
0.00 0.5mile

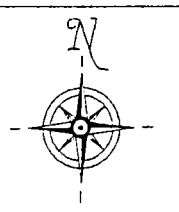


Figure 3-2
Offsite Sample Location Map

Bill's Excavating
Lockport, Illinois

<p>Table 3-1 Sample Descriptions Bill's Excavating Site</p>			
Sample No.*	Depth (Inches)	Appearance	Location
SS01	4-8	Dark brown silty soil	Northeast of the smokestack at the north end of site, near a drum staging area.
SS02	4-6	Dark brown silty soil with brick bits, rocks, and wood chips	Northwest of the smokestack at the north end of site.
SS03	4-6	Dark brown silty soil	Northwest section, in area where buildings were recently leveled and coal tar found.
SS04	4-6	Moist dark brown silty soil	Adjacent to 50'x15'x3' concrete foundation covered in coal tar.
SS05	4-8	Black silty soil	Between Battery 1 and empty coal storage pit.
SS06	4-8	Black silty soil	Approximately 50 feet south of empty coal storage pit.
SS07	6-10	Black cinder-like material	East of coal storage pit in wrecked car lot area.
SS08	6-8	Dark brown silty soil, moist with some roots	Close to a children's swing set by trailer homes near Lockport Road site entrance in central part of site's eastern section.
SS09	4-8	Dark brown silty soil	Northeast side of site near stockpile of empty gas tanks.
SS10	4-8	Dark brown silty soil with gravel/debris	Northeast side of site along resinous substance drip-line under trailer bed.
SS11	4-8	Black silty soil	Near burn pit wall, just east of Battery 4, away from new fill material used to cover pit.

Table 3-1 (Continued) Sample Descriptions Bill's Excavating Site			
Sample No.*	Depth (Inches)	Appearance	Location
SS12	4-8	Dark brown silty soil	Background--offsite, just north of north site boundary.
ST02	0-8	Dark brown silty soil	Background--offsite, north of site boundary on the west bank of I&M Canal.
ST03	0-8	Dark brown sandy soil with some clay	West bank of I&M Canal across from gas tank area.
ST04	0-8	Black sandy/silty soil	West bank of I&M Canal across from trailer homes.
ST05	0-8	Black silty soil	West bank of I&M Canal at south edge of site.
ST06	0-8	Black muck w/oily sheen. Received high concentration analyses.	Northwest site perimeter, from a block manhole-type structure where three pipes converge near railroad tracks, due west of driveway separating Batteries 2 and 3.
RW01	90 feet	Clear water	Onsite shallow drift residential well near trailer homes on east side.
RW02	Unknown	Clear water	Background--offsite, at a retail store about 0.4 mile east of main site entrance.
RW03	Unknown	Clear water	Background--offsite, from restroom sink of a storage building behind the retail store, about 0.4 mile east of site.
WS01	Not Sampled	Not Applicable	Waste sample WS01 was not collected because burn pit area targeted for an ash sample was covered with clay material.
WS02	Resin	Sticky dark amber resin-like substance	Resinous material leaking from trailer at northeast site section.

Table 3-1 (Continued) Sample Descriptions Bill's Excavating Site			
Sample No.*	Depth (Inches)	Appearance	Location
WS03	Coal Tar	Tar-like substance	Coal tar taken from northwest section where a building was recently leveled.

* Sample numbers are made up of four alpha numerics (two letters followed by two numbers). The two letters designate the type of media sampled, and the two numbers designate different sample locations for each media. Two-letter sample type designators are as follows:

SS--surface soil
ST--sediment
RW--residential well
WS--waste source

Table 3-2 Laboratory Information Bill's Excavating Site		
Media	Analyses	Laboratory
Soil	Organic	ENCOTEC Ann Arbor, Michigan
	Inorganic	SVL Analytical Inc. Kellogg, Idaho
	Dioxin (PCDD/PCDFs)	Triangle Labs of RTP Durham, North Carolina (Subcontracted by Grace Analytical Labs, Berkeley, Illinois)
Sediment	Organic	Chester Labnet--Houston Houston, Texas
	Inorganic	IT--Saint Louis Laboratory Earth City, Missouri
Resident Wells	Organic and Inorganic	USEPA CRL Laboratory Chicago, Illinois
Waste Samples	Organic and Inorganic	Argonne National Laboratory Argonne, Illinois

sampled the well, which is approximately 90 feet deep, and found it to be free of contamination. Building remnants and storage areas were immediately apparent in the heavy overgrowth of vegetation. The party headed south, walking clockwise around the site perimeter, stopping to investigate various areas. The owner rents part of the southern site area to a salvage operator, who stores numerous wrecked cars on the property. Hundreds of junked cars occupy the southern portion of the site.

An empty coal storage pit was observed. The pit is about 20 feet deep and covers approximately one acre. A fill area on the western side of the pit was used to elevate rail lines. Rusted machinery was found further north along the western side of the site. Empty drums, rusted gasoline underground storage tanks, and more wrecked vehicles were strewn on the northern portion of the site.

One onsite building serves as a garage for repairing trucks belonging to Bill's Excavating.

Areas of possible hazardous contamination include a concrete foundation (50'x15'x3') covered with a thick layer of coal tar. The waste showed evidence of migration, with drip stains along the side of the foundation. An area north of the tar-laden foundation revealed recent excavating work where some buildings had been leveled. Tar globs were found mixed in with building debris. The glistening tar was soft as a result of heating by direct sunlight and generated a strong odor. An open trailer filled with drums leaking a resinous material was found in the northeastern section of the site. The waste, which leaked out of the drums, was found crusted to the back end of the trailer, below the bed. Fresh resinous waste could also be seen oozing out of one drum in the trailer.

Although the area is industrial, several trailer homes are located near the site entrance; four are occupied. Garbage mixed with ashes was found in a small burn pit near the homes. Residents used the burn pit to incinerate their household wastes. The site owner and his children ride dirt bikes on dirt tracks that run along the site perimeter. Although the elevated road makes public access to the site possible, such access is not probable because the land is secluded and privately owned. A rear site entrance exists, but is blocked by a locked gate.

3.3 Site Representative Interview

An interview with the owner, Bill Schopf Jr., revealed that he purchased the property from Bill Schopf Sr. in 1979. The land was formerly used for a U.S. Steel

coking operation. Mr. Schopf also informed the site assessment personnel of the current use of the facility for business and residential purposes.

3.4 Soil Sampling

A total of 12 soil samples were collected at the Bill's Excavating site. Two samples were collected near the smokestack at the northern end of the site: SS01 to the northeast and SS02 to the northwest. This area is covered by empty drums and decaying machinery. Sample SS03 was taken from the recently graded area in the northwest section where patches of coal tar were found. Sample SS04 was collected near the concrete slab covered with coal tar. Three samples were collected to the north (SS05), south (SS06), and east (SS07) of the coal storage pit. Sample SS08 was collected within 200 feet of the trailer home closest to the onsite drinking well, near a children's swing set. Sample SS09 was collected in the area where empty gas tanks are stockpiled. Sample SS10 was taken along the drip line, underneath the back end of the trailer, and sample SS11 was collected near the burn pit wall, just east of Battery 4, away from new fill material used to cover the pit.

A background sample, SS12, was collected north of the site boundary line to help establish the local soil composition. Sample SS11 (collected near the burn pit) and SS12 (background sample) were analyzed for dioxins.

3.5 Sediment and Surface Water Sampling

Sediment samples were collected to evaluate the potential for onsite contaminants to migrate through the surface water pathway to potential receptors. No surface water samples were planned or collected for this ESI.

3.5.1 Sediment Samples

Five sediment samples (ST02 - ST06) were collected at the Bill's Excavating site. Four sediment samples were collected to identify possible release of hazardous substances to the surface water pathway. A background sediment sample was also collected. The background sample, ST02, was collected from an offsite location, upstream, along the west bank of the I&M Canal. Three samples were taken, along the site perimeter, from the west bank of the I&M Canal. Sample ST03 was collected approximately parallel to the gas tanks at the north end of the site. Sample ST04 was collected near the trailer homes, and sample ST05 was taken at the south site boundary. No sediment samples were collected from the Chicago Sanitary and

Ship Canal because train tracks separate the site from the surface water body. Sediment sample ST06 was collected from the northwest site perimeter, in a block manhole-type structure where three pipes converge near railroad tracks due west of the driveway separating Batteries 2 and 3. The ST06 location was considered to be a primary runoff drainage point for the northwest site perimeter. Sediment sample ST06 was composed primarily of black muck; it had an oily sheen. ST06 was analyzed as a high concentration sample because of the oily sheen.

3.5.2 Surface Water Samples

No surface water samples were required or collected for this ESI.

3.6 Residential Well Sampling

Three residential well samples were collected to investigate possible drinking water contamination. Sample RW01 was collected from the onsite drinking well, which has an approximate depth of 90 feet. Samples RW02 and RW03 were collected offsite, from nearby private wells. RW02 was obtained at a retail store about 0.4 mile east of the main site entrance. RW03 was collected from the restroom sink of a storage building behind the same retail store where RW02 was obtained, about 0.4 mile east of the site. The number of groundwater samples collected was limited because the site is isolated by two surface water bodies.

3.7 Waste Source Sampling

Potential waste source sampling was conducted to determine waste characteristics. Two waste source samples (WS02 and WS03) were collected from the site. Waste source sample WS01 was to be a sample of ashes from inside the burn pit, but it was not collected because the burn pit was covered with a clay material. Waste source sample WS02 is a resinous material leaking from drums stored in the open trailer bed at the northeast site quadrant. Waste source sample WS03 consists of coal tar from the coal tar area where a building was recently leveled in the northwest section of the site.

Samples WS02 and WS03 were analyzed as high concentration waste source samples.

3.8 Analytical Results

Appendix C presents the ESI analytical data and Table 3-3 shows the "key sample" compounds.

3.9 Key Samples

"Key samples" are those samples that contain hazardous substances in sufficient concentration above best available background levels to document an observed release. Table 3-3 identifies ESI key samples with concentrations listed in milligrams per kilograms (mg/kg).

Table 3-3 Key Sample Summary Surface Soil Samples Bill's Excavating								
Compounds	Sample Number Concentrations in mg/kg							
	SS01	SS02	SS03	SS04	SS07	SS10	SS11	SS12 Background
Semivolatile Organic Compounds								
Fluoranthene	280D	230D	---	---	---	---	---	24
Inorganic Compounds								
Copper	---	---	---	---	---	---	651 JE	84.5 JE
Lead	653	---	---	---	---	---	---	151
Magnesium	---	---	18400 JE	17700 JE	21700 JE	21500 JE	---	5130 JE
Nickel	---	---	---	---	---	---	175	28.5 JE
Zinc	680	---	---	---	---	---	2840 JE	196 JE
Dioxins (Toxic Equivalent Factor) (TEF)								
2378 TCDF	---	---	---	---	---	---	0.000212 J	0.000004 U
23478-PeCDF	---	---	---	---	---	---	0.000082 J	0.000008 U
2378 TCDD (TEF)	---	---	---	---	---	---	0.0000622	---

J Reported value estimated.

D Compound identified at a secondary dilution factor.

E Reported value is estimated because of the presence of interference.

U Substance undetected. The reported value is the contract required sample quantitation limit.

Table 3-3 (Continued) Key Sample Summary Sediment Samples Bill's Excavating		
Compounds	Sample Number Concentrations in mg/kg	
	ST02 (Background)	ST06*
Volatile Organic Compounds		
Xylene (Total)	16 U	40

* Sediment Sample ST06 was analyzed as a high concentration sample.

U Substance undetected. The reported value is the contract required quantitation limit.

Table 3-3 (Continued) Key Sample Summary Residential Well Samples Bill's Excavating			
Compounds	Sample Number Concentrations in mg/kg		
	RW01	RW02 ** (Background)	RW03 ** (Background)
Vanadium	10	8 U	8U
Zinc	143	59	40 U

** Both samples are considered background locations.

U Substance undetected. The reported value is the contract required quantitation limit.

4.0 Characterization of Sources

4.1 Introduction

ESI sample analytical results document contaminated soil at the Bill's Excavating site.

4.2 Waste Source: Contaminated Soil

4.2.1 Description

Analytical results of 7 of the 11 onsite soil samples collected during the ESI confirm and document an observed release of hazardous substances to onsite soils, which constitutes observed contamination. The area encompassed by the seven onsite key sample locations (SS01, SS02, SS03, SS04, SS07, SS10, and SS11) defines an approximate area of contaminated soil and establishes the maximum surface area of contamination that can be assumed to exist onsite. Key onsite soil samples analyses identified a semivolatile organic compound, inorganic hazardous substances, and two dioxin compounds that were in concentrations meeting observed release criteria.

The site is estimated to cover approximately 64 acres. The estimated area of surface soil contamination (delineated by key onsite soil samples) is about 30 percent of the total area covered by the site or 19.2 acres (836,352 square feet).

4.2.2 Waste Characteristics

The following hazardous substances were identified in the seven key onsite soil samples (Table 3-3): one semivolatile organic compound, ranging from 230 mg/kg to 280 mg/kg; five inorganic compounds ranging from nickel at 175 mg/kg to magnesium at 21,700 mg/kg; and two dioxin compounds at 6.22×10^{-5} mg/kg toxic equivalent factor (TEF).

4.3 Waste Source: Resinous Material

4.3.1 Description

An open trailer filled with drums leaking a resinous material is located in the northeastern section of the Bill's Excavating site. This exposed waste establishes an observed release to the soil exposure pathway. Resinous waste was observed on the ground outside the trailer and crusted to the back end of the trailer, below the trailer bed. Fresh resinous waste was also seen oozing out of at least one drum in the

trailer. The actual amount of resinous material at the Bill's Excavating site is unknown, but ESI field team members estimate 40 drums are in the open trailer. If all the drums contain resinous material, the estimated waste volume would be 2,200 gallons. In addition, empty drums contaminated with resinous material, the trailer itself, and soil contaminated with residual amounts of the hazardous substance are likely to be considered hazardous wastes.

4.3.2 Waste Characteristics

Analytical results of WS02, the resinous waste source sample, identified 17 hazardous substances with concentrations that exceed the CLP contract required quantitation limits (CRQLs). CRQLs may or may not be equal to the quantitation limit of a given substance in a given sample. For ESI site assessment purposes, the CRQL refers to both the contract-required quantitation limit and the contract-required detection limit. Sample WS02 (resin) had four organic compounds exceeding the CRQL in ranges of concentration from 13.0 ug/kg to 37 ug/kg and 13 inorganic analytes exceeding the CRQL in ranges of concentration from 4.2 mg/kg to 2,760 mg/kg. Examples of hazardous substances identified in waste source sample WS02 are isophorone (13 ug/kg), benzoic acid (37 ug/kg), dimethylphthalate (19 ug/kg), bis(2-ethylhexyl)phthalate (16 ug/kg), aluminum (2,140 mg/kg), barium (36.4 mg/kg), cadmium (12.7 mg/kg), cobalt (107 mg/kg), copper (25.4 mg/kg), lead (69.6 mg/kg), and selenium (4.2 mg/kg).

4.4 Waste Source: Coal Tar Substance

4.4.1 Description

A concrete foundation, approximately 50 feet by 15 feet, in the northwest section of the site is covered with about 9 inches of coal tar. Drip stains from the coal tar waste were observed along the sides of the foundation which is about 3-feet high. North of the tar-laden foundation, tar globs were observed in debris of recently leveled buildings. The tar appeared to be soft as a result of heating from direct sunlight and generated a strong odor. The exposed coal tar waste is uncontained and constitutes an observed release to the soil exposure pathway. The exact amount of coal tar waste and associated contaminated debris and soil at the Bill's Excavating site is unknown; however, ESI personnel estimate 662.5 cubic feet (24.5 cubic yards) of the hazardous substance were observed.

4.4.2 Waste Characteristics

Analytical results of the coal tar-like waste source sample WS03 identified 42 hazardous constituents in concentrations above the CLP CRQLs. WS03 has 27 organic compounds, ranging from 20 ug/kg to 32,000 ug/kg in concentration and 15 inorganic analytes, that exceed CRQLs, ranging from 0.16 mg/kg to 18,000 mg/kg in concentration. Examples of hazardous substances identified in waste source sample WS03 are benzene (47 ug/kg), toluene (62 ug/kg), ethylbenzene (90 ug/kg), total xylenes (62 ug/kg), phenol (450 ug/kg), naphthalene (32,000 ug/kg), fluorene (6,000 ug/kg), phenanthrene (20,000 ug/kg), pyrene (8,300 ug/kg), benzo(a)anthracene (4,100 ug/kg), chrysene (4,300 ug/kg), aluminum (6,330 mg/kg), arsenic (46.7 mg/kg), barium (96.1 mg/kg), chromium (17.7 mg/kg), lead (237 mg/kg), mercury (0.16 mg/kg), selenium (7.4 mg/kg), and vanadium (23.2 mg/kg).

5.0 Discussion of Migration Pathways

5.1 Introduction

This section includes information useful in analyzing the potential environmental impact of contaminants found at the Bill's Excavating site on the four migration and exposure pathways: soil, surface water, groundwater, and air.

5.2 Soil

The site is inactive; however, at least four occupied trailer homes are onsite. A children's swing set indicated the potential for children to come into direct contact with onsite contaminated soils. Workers are also onsite; the site owner uses onsite garages to maintain vehicles and heavy equipment for his business, Bill's Excavating. The owner also conducts a brick salvage and junk yard operation on the property. Site access is limited because the area is remote, and canals and railroad tracks border the property on three sides. Generally, the property is not open to the public, but hikers or others seeking recreational use of the land can access it. An interview with the owner revealed that his family rides dirt bikes around the site perimeter, making accessibility and actual contact with contaminated soil and resulting airborne particulates probable. The site has thick wooded areas. Several forest animals were seen during the field reconnaissance.

The site was formerly a U.S. Steel coking facility that ceased operations around 1930. During the ESI reconnaissance and sampling field trips, exposed hazardous and solid wastes were observed. Several areas of visibly contaminated soil were observed onsite. A concrete foundation located in the northwest section of the site is covered with about 9 inches of coal tar. Drip stains from the coal tar indicate a release of the hazardous substance to surface soils surrounding the foundation. North of the tar-laden foundation, tar globs were observed in building debris, again indicating release of the coal tar substance to onsite surface soils. In the northeast section of the site, an open trailer filled with rusted drums showed visible evidence of a resinous material leaking to the soil below the trailer. Analytical results of the exposed/uncontained coal tar and resin wastes indicate that they contain numerous hazardous substances that can potentially be released to onsite soils.

During ESI sampling, 11 onsite surficial soil samples were collected from depths from 4 to 10 inches below ground surface. Analytical results of the soil samples indicate that seven onsite soil samples contain hazardous substances that meet

observed release criteria. Organic and inorganic compounds and two dioxin compounds were identified in onsite surface soils. Table 3-3 presents analytical results of key onsite soil samples; Section 4.2 discusses the seven key soil samples and their general waste characteristics. It is estimated that about 30 percent of the 64-acre site contains contaminated soils.

Onsite contaminated surface soils present a potential threat to onsite residents and workers, as well as wildlife and the environment. No schools or day care facilities are located within 200 feet of the site. The residential population within 1 mile of the site is estimated at 2,149 people.

5.3 Surface Water

The presence of coal tar and unknown resinous wastes being released onsite justifies concern with the potential threat to the environment. Surface water bodies, that could potentially be affected by surface water runoff border the site.

The site is relatively flat; therefore, it retains much of the runoff generated during seasonal periods of precipitation. The north site boundary is generally at a higher elevation and is not targeted within the surface water pathway. The west site boundary has railroad tracks and ditches that prevent site runoff from reaching the Chicago Sanitary and Ship Canal. The east site border has some natural buffer areas, including wooded areas, ditches, and access roads that restrict site runoff from discharging offsite. Excess runoff, however, may exit the site at points along the east site border and discharge into the I&M Canal. The segment of the I&M Canal that runs along the east site boundary is considered the probable point of entry for the in water segment of the surface water pathway. In addition to the overland flow segments of the surface water pathway threat, hazardous substance migration could potentially occur through groundwater to surface water recharge.

Four sediment samples, including an upstream background sample, were collected along the west bank of the I&M Canal. I&M Canal sediment samples generated key release sample data. A sediment sample was also collected from a concrete conduit designed to direct runoff below railroad tracks along the west site boundary. Although this sediment sample was primarily black muck, it had an oily sheen. This sample contained total xylene at 40 mg/kg.

Targets along the 15-mile downstream distance limit include the I&M Canal, the Des Plaines River, and numerous sensitive environments and wetlands (U.S. Department of Interior 1973). The Lockport Prairie, a state designated nature area,

is located within 1 mile of the site. The Material Services Prairie, the Markgraf Quarry Nature Area, and Pilcher Park are state designated nature areas within 4 miles of the site (Illinois Department of Conservation 1993). One federally protected and two state protected wild life species are within 4 miles of the site. No surface water intakes are located along the 15-mile downstream surface water segment from the site. The surface water bodies that border the site including the I&M Canal (feeds the Des Plaines River) and the Chicago Sanitary and Ship Canal are considered fisheries (Rockford Map Publishers, Inc. 1980).

5.4 Groundwater

Three aquifers are beneath the Bill's Excavating site: The Quaternary drift, Silurian dolomite, and Cambrian/Ordovician. The depth to groundwater at the site is about 15 feet. The Quaternary drift deposit ranges in thickness up to 110 feet and is composed of interbedded till units, lacustrine clay deposits, and water-bearing sand and gravel units. The Silurian Dolomite bedrock formation varies in thickness from 110 to 500 feet. The Silurian Dolomite and Quaternary drift aquifers are reported to be hydraulically interconnected by the Illinois State Water Survey. The Cambrian/Ordovician aquifer has depths of 500 feet or more and is not connected with the Silurian Dolomite bedrock aquifer. These two layers are separated by the Ordovician Maquoketa Shale Group, which acts as an impermeable barrier to downward hydraulic migration (Illinois State Geological Survey 1966).

An onsite private well is presumably about 90 feet deep. The onsite well reportedly supplies water to four onsite trailer homes. It is estimated that approximately 12 residents drink from the onsite well. Analytical results of groundwater samples collected from the onsite well indicate that at least two contaminants are present that meet observed release to the groundwater pathway criteria. The presence of these two contaminants in site groundwater is a potential threat to offsite private drinking water wells. However, because surface water bodies border the site on three sides, it is difficult to determine whether offsite private wells are likely to be affected by contaminated groundwater onsite. Also, the direction of groundwater flow at the site is unknown.

About 442 private wells are screened in the shallow drift aquifer within 4 miles of the site. In addition, two school wells and three municipal wells are in the Joliet, area, within 4 miles of the site [Illinois State Water Survey (ISWS) 1993].

About 1,298 private wells are screened in the dolomite bedrock within 4 miles of the site. In addition, approximately 15 school wells, 10 small community and subdivision wells, and between 3 to 5 municipal wells which supply the Crest Hill, Illinois are within 4 mile of the site (ISWS 1993).

The groundwater population targets for the three aquifers beneath the site are:

Aquifer	Distance Category			
	0 to 1 mile	1 to 2 miles	2 to 3 miles	3 to 4 miles
Quaternary Drift	140	384	819	14,474
Silurian Dolomite	4,269	8,349	10,727	10,574
Cambrian/Odovician	2,503	6,453	20,659	16,454
Total	6,912	15,186	32,205	41,502

5.5 Air

No releases to the air pathway attributable to the site are on record and none was observed during ESI field activities. During ESI field work, air monitoring with a flame ionization detector showed no readings above background. No air sampling was conducted during the ESI. The residential population is approximately 101,904 people within 4 miles of the site.

6.0 References

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- Illinois Environmental Protection Agency (IEPA), 1980. Division of Land Pollution Control, Memorandum on Bill's Excavating site with a completed Potential Hazardous Waste Site Inspection Report Form (EPA Form T2070-3), August, 19.
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- Lewis Publishers, 1990. The Water Encyclopedia, Second Edition.
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- U.S. Environmental Protection Agency (USEPA), 1980a. Hazardous Waste Hotline Report Form, Report No. 544, Caller Complaint, July 25.

USEPA, 1980b. Potential Hazardous Waste Site Identification and Preliminary Assessment Form (EPA Form T2070-2), August 4.

U.S. Geological Survey, Photorevised 1973. 7.5 minute topographic maps; Elwood, Mokena, Plainfield, and Joliet, Illinois quadrangles.

Appendix A
Bill's Excavating
Site 4-Mile Radius Map
and
15-Mile Surface Water Route Map

SDMS US EPA Region V

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Appendix B

Bill's Excavating

Target Compound List, Target Analyte List, and Dioxin Compound List

Target Compound List

Volatiles

Chloromethane	1,2-Dichloropropane
Bromomethane	Cis-1,3-Dichloropropene
Vinyl Chloride	Trichloroethene
Chloroethane	Dibromochloromethane
Methylene Chloride	1,1,2-Trichloroethane
Acetone	Benzene
Carbon Disulfide	trans-1,3-Dichloropropane
1,1-Dichloroethene	Bromoform
1,1-Dichloroethane	4-Methyl-2-pentanone
1,2-Dichloroethene (total)	2-Hexanone
Chloroform	Tetrachloroethene
1,2-Dichloroethane	Toluene
2-Butanone	1,1,2,2-Tetrachloroethane
1,1,1-Trichloroethane	Chlorobenzene
Carbon Tetrachloride	Ethyl benzene
Bromodichloromethane	Styrene
	Xylenes (total)

Source: Target Compound List for water and soil with low or medium levels of volatile and semivolatile organic contaminants, as shown in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, September 27, 1991.

Target Compound List (Continued)

Semivolatiles

Phenol	Acenaphthene
bis(2-Chloroethyl) ether	2,4-Dinitrophenol
2-Chlorophenol	4-Nitrophenol
1,3-Dichlorobenzene	Dibenzofuran
1,4-Dichlorobenzene	2,4-Dinitrotoluene
1,2-Dichlorobenzene	Diethylphthalate
2-Methylphenol	4-Chlorophenyl-phenyl ether
2,2-oxybis-(1-Chloropropane)*	Fluorene
4-Methylphenol	4-Nitroaniline
N-Nitroso-di-n-dipropylamine	4,6-Dinitro-2-methylphenol
Hexachloroethane	N-Nitrosodiphenylamine
Nitrobenzene	4-Bromophenyl-phenyl ether
Isophorone	Hexachlorobenzene
2-Nitrophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenanthrene
bis(2-Chloroethoxy) methane	Anthracene
2,4-Dichlorophenol	Carbazole
1,2,4-Trichlorobenzene	Di-n-butylphthalate
Naphthalene	Fluoranthene
4-Chloroaniline	Pyrene
Hexachlorobutadiene	Butyl benzyl phthalate
4-Chloro-3-methylphenol	3,3-Dichlorobenzidine
2-Methylnaphthalene	Benzo(a)anthracene
Hexachlorocyclopentadiene	Chrysene
2,4,6-Trichlorophenol	bis(2-Ethylhexyl)phthalate
2,4,5-Trichlorophenol	Di-n-Octylphthalate
2-Chloronaphthalene	Benzo(b)fluoranthene
2-Nitroaniline	Benzo(k)fluoranthene
Dimethylphthalate	Benzo(a)pyrene
Acenaphthylene	Indeno(1,2,3-cd)pyrene
2,6-Dinitrotoluene	Dibenzo(a,h)anthracene
3-Nitroaniline	Benzo(g,h,i)perylene

*Previously known by the name of bis(2-chloroisopropyl) ether.

Source: Target Compound List for water and soil with low or medium levels of volatile and semivolatile organic contaminants, as shown in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, September 27, 1991.

Target Compound List (Continued)

Pesticide/PCB

alpha-BHC	4,4-DDT
beta-BHC	Methoxychlor
delta-BHC	Endrin ketone
gamma-BHC (Lindane)	Endrin aldehyde
Heptachlor	alpha-chlordane
Aldrin	gamma-chlordane
Heptachlor epoxide	Toxaphene
Endosulfan I	Aroclor-1016
Dieldrin	Aroclor-1221
4,4-DDE	Aroclor-1232
Endrin	Aroclor-1242
Endosulfan II	Aroclor-1248
4,4-DDD	Aroclor-1254
Endosulfan sulfate	Aroclor-1260

Source: Target Compound List for water and soil containing less than high concentrations of pesticides/aroclor, as shown in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, September 27, 1991.

Target Analyte List

Aluminum	Magnesium
Antimony	Manganese
Arsenic	Mercury
Barium	Nickel
Beryllium	Potassium
Cadmium	Selenium
Calcium	Silver
Chromium	Sodium
Cobalt	Thallium
Copper	Vanadium
Iron	Zinc
Lead	Cyanide

Source: Target Analyte List in the Quality Assurance Project Plan for Region V Superfund Site Assessment Program, September 27, 1991.

Dioxin Compound List

	TEF
2,3,7,8-Tetrachlorinated dibenzo-p-dioxin	1.0
2,3,7,8-Tetrachlorinated dibenzofuran	0.1
1,2,3,7,8-Pentachlorinated dibenzofuran	0.05
1,2,3,7,8-Pentachlorinated dibenzo-p-dioxin	0.5
2,3,4,7,8-Pentachlorinated dibenzofuran	0.5
1,2,3,4,7,8-Hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-Hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-Hexachlorinated dibenzofuran	0.1
1,2,3,4,7,8-Hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-Hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-Hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-Hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-Heptachlorinated dibenzofuran	0.01
1,2,3,4,6,7,8-Heptachlorinated dibenzo-p-dioxin	0.01
1,2,3,4,7,8,9-Heptachlorinated dibenzofuran	0.01
Octachlorinated dibenzo-p-dioxin	0.001
Octachlorinated dibenzofuran	0.001

TEF - Toxicity Equivalency Factor

Appendix C
Bill's Excavating
Analytical Results

Appendix C

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Data Reporting Qualifiers

Definitions for Organic Chemical Data Qualifiers

- R - Indicates that the data are unusable. The compound may or may not be present.
- U - Indicates compound was analyzed for but not detected. The associated numerical value is the sample quantitation limit.
- J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- N - Indicates presumptive evidence of a compound. This flag is only used for TICs where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, the N code is not used.
- P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported and flagged with a "P".
- C - This flag applies to results where identification has been confirmed by GC/MS.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag must be used for a TIC as well as for a positively identified TCL compound.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for the specific analysis. This flag will not apply to pesticide/PCBs analyzed by GC/MS methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- A - This flag indicates that a TIC is a suspected aldol-condensation product.
- X - Other specific flags may be required to properly define the results. The "X" flags are fully described on the data tables.

Data Reporting Qualifiers

Definitions for Inorganic Chemical Data Qualifiers

- R - Indicates that the data are unusable. The compound may or may not be present.
- U - Indicates compound was analyzed for but not detected. The associated numerical value is the sample quantitation limit.
- J - Indicates an estimated value.
- B - Indicates that the reported value is less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
- E - The reported value is estimated because of the presence of interference.
- M - Duplicate injection precision criteria not met.
- N - Spiked sample recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis was not within control limits.
- + - Correlation coefficient for the MSA was less than 0.995.

Volatile Organic Analysis for Soil Samples Bill's Excavating						
Volatile Compound	Sample Locations and Number Concentrations in ug/kg					
	SS01	SS02	SS03	SS04	SS05	SS06
Chloromethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Bromomethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Vinyl Chloride	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Chloroethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Methylene Chloride	12 UJB	13 UJB	12 UJB	13 UJB	13 UJB	14 UJB
Acetone	12 UJB	13 U	12 UJB	13 U	13 UJ	14 UJ
Carbon Disulfide	12 U	13 U	12 U	13 U	13 UJ	14 UJ
1,1-Dichloroethene	12 U	13 U	12 U	13 U	13 UJ	14 UJ
1,1-Dichloroethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
1,2-Dichloroethene (total)	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Chloroform	12 U	13 U	12 U	13 U	13 UJ	14 UJ
1,2-Dichloroethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
2-Butanone	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
1,1,1-Trichloroethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Carbon Tetrachloride	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Bromodichloromethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
1,2-Dichloropropane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
cis-1,3-Dichloropropene	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Trichloroethene	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Dibromochloromethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
1,1,2-Trichloroethane	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Benzene	12 U	13 U	12 U	13 U	13 UJ	14 UJ
trans-1,3-Dichloropropene	12 U	13 U	12 U	13 U	13 UJ	14 UJ
Bromoform	12 U	13 U	12 U	13 U	13 UJ	14 UJ
4-Methyl-2-Pentanone	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
2-Hexanone	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Tetrachloroethene	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
1,1,2,2-Tetrachloroethane	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Toluene	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Chlorobenzene	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Ethylbenzene	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Styrene	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Xylene (total)	12 U	13 UJ	12 U	13 U	13 UJ	14 UJ
Total Number of TICs *	0	0	0	0	3	3

* Number, not concentrations, of tentatively identified compounds (TICs).

Volatile Organic Analysis for Soil Samples (Continued)						
Bill's Excavating						
Volatile Compound	Sample Locations and Number					
	Concentrations in ug/kg					
	SS07	SS08	SS09	SS10	SS11	SS12 Background
Chloromethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Bromomethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Vinyl Chloride	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Chloroethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Methylene Chloride	11 UJB	13 UJB	12 UJB	11 UJB	14 UJB	13 UJB
Acetone	15 UJB	13 U	12 UJ	11 UJB	14 U	13 UJ
Carbon Disulfide	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,1-Dichloroethene	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,1-Dichloroethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,2-Dichloroethene (total)	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Chloroform	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,2-Dichloroethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
2-Butanone	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,1,1-Trichloroethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Carbon Tetrachloride	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Bromodichloromethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,2-Dichloropropane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
cis-1,3-Dichloropropene	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Trichloroethene	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Dibromochloromethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
1,1,2-Trichloroethane	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Benzene	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
trans-1,3-Dichloropropene	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
Bromoform	11 UJ	13 U	12 UJ	11 U	14 U	13 UJ
4-Methyl-2-Pentanone	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
2-Hexanone	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Tetrachloroethene	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
1,1,2,2-Tetrachloroethane	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Toluene	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Chlorobenzene	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Ethylbenzene	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Styrene	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Xylene (total)	11 UJ	13 U	12 UJ	11 U	14 UJ	13 UJ
Total Number of TICs *	1	0	1	0	0	2

* Number, not concentrations, of tentatively identified compounds (TICs).

Volatile Organic Analysis for Soil Samples Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample SS05		
Unknown	2.65	7 J
Trichlorofluoromethane	3.15	27 JN
Unknown Siloxane	12.40	8 J
SS06		
Unknown	2.63	8 J
Trichlorofluoromethane	3.15	29 JN
Unknown Siloxane	12.40	10 J
SS07		
Trichlorofluoromethane	3.17	10 JN
SS09		
Trichlorofluoromethane	3.17	8 JN
SS12		
Trichlorofluoromethane	3.18	17 JN
Unknown Siloxane	12.42	8 J

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Semivolatile Organic Analysis for Soil Samples						
Bill's Excavating						
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg					
	SS01	SS02	SS03	SS04	SS05	SS06
Phenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
bis(2-Chloroethyl)Ether	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2-Chlorophenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
1,3-Dichlorobenzene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
1,4-Dichlorobenzene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
1,2-Dichlorobenzene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2-Methylphenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2,2'-oxybis(1-Chloropropane)	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
4-Methylphenol	12000 U	13000 U	12000 U	13000 U	13000 U	270 J
n-Nitroso-Di-n-Propylamine	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Hexachloroethane	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Nitrobenzene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Isophorone	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2-Nitrophenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2,4-Dimethylphenol	12000 U	13000 U	12000 U	13000 U	13000 U	220 J
bis(2-Chloroethoxy)Methane	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2,4-Dichlorophenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
1,2,4-Trichlorobenzene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Naphthalene	6000 J	3100 J	3600 J	1000 J	3600 J	2500
4-Chloroaniline	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Hexachlorobutadiene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
4-Chloro-3-Methylphenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2-Methylnaphthalene	2000 J	950 J	870 J	780 J	3900 J	2900
Hexachlorocyclopentadiene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2,4,6-Trichlorophenol	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2,4,5-Trichlorophenol	31000 U	32000 U	30000 U	32000 U	33000 U	1100 U
2-Chloronaphthalene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
2-Nitroaniline	31000 U	32000 U	30000 U	32000 U	33000 U	1100 U
Dimethyl Phthalate	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Acenaphthylene	12000 U	9000 J	930 J	13000 U	13000 U	220 J
2,6-Dinitrotoluene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
3-Nitroaniline	31000 U	32000 U	30000 U	32000 U	33000 U	1100 U
Acenaphthene	2300 J	13000 U	12000 U	13000 U	13000 U	66 J
2,4-Dinitrophenol	31000 U	32000 U	30000 UJ	32000 U	33000 U	1100 U
4-Nitrophenol	31000 U	32000 U	30000 U	32000 U	33000 U	1100 U
Dibenzofuran	9100 J	2800 J	700 J	13000 U	1200 J	890
2,4-Dinitrotoluene	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Diethylphthalate	12000 U	13000 U	12000 U	13000 U	13000 J	450 U
4-Chlorophenyl-phenylether	12000 U	13000 U	12000 U	13000 U	13000 U	450 U
Fluorene	12000 U	9000 J	12000 U	13000 U	13000 U	140 J
4-Nitroaniline	31000 U	32000 U	30000 U	32000 U	33000 U	1100 U
4,6-Dinitro-2-Methylphenol	31000 UJ	32000 U	30000 U	32000 U	33000 U	1100 U
n-Nitrosodiphenylamine	12000 UJ	13000 U	12000 U	13000 U	13000 U	450 U
4-Bromophenyl-phenylether	12000 UJ	13000 U	12000 U	13000 U	13000 U	450 U

Semivolatile Organic Analysis for Soil Samples (Continued)						
Bill's Excavating						
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg					
	SS01	SS02	SS03	SS04	SS05	SS06
Hexachlorobenzene	12000 UJ	13000 U	12000 U	13000 U	13000 U	450 U
Pentachlorophenol	31000 UJ	32000 U	30000 U	32000 U	33000 U	1100 U
Phenanthrene	17000 D	170000 D	6900 J	7200 J	5800 J	3500 DJ
Anthracene	34000 J	30000	1500 J	1900 J	1100 J	470
Carbazole	16000 J	20000	12000 U	13000 U	13000 U	270 J
di-n-Butylphthalate	12000 UJ	13000 U	12000 U	13000 U	13000 U	450 U
Fluoranthene	280000 D	230000 D	15000	11000 J	5900 J	2500
Pyrene	220000 D	200000 D	15000 J	15000 J	7100 J	3000
Butylbenzylphthalate	12000 UJ	13000 UJ	12000 UJ	13000 UJ	13000 UJ	450 U
3,3'-Dichlorobenzidine	12000 UJ	13000 UJ	12000 UJ	13000 UJ	13000 UJ	450 U
Benzo(a)Anthracene	210000 D	140000 D	11000 J	10000 J	4800 J	450 U
Chrysene	190000 D	120000 D	12000 J	14000	5900 J	3200
bis(2-Ethylhexyl)Phthalate	12000 UJD	13000 U	12000 UJ	13000 UJ	13000 UJ	450 UJB
di-n-Octyl Phthalate	12000 UJD	13000 U	12000 U	13000 UJ	13000 U	450 UJ
Benzo(b)Fluoranthene	170000 D	110000 D	21000	17000 J	9300 J	3700 DJ
Benzo(k)Fluoranthene	170000 D	88000 D	12000 U	13000 UJ	13000 U	450 U
Benzo(a)Pyrene	140000 D	100000 J	11000 J	12000 J	3800 J	1500 J
Indeno(1,2,3-cd)Pyrene	70000 JD	52000 J	9200 J	6500 J	3300 J	450 UJ
Dibenzo(a,h)Anthracene	47000 JD	29000 J	4000 J	4200 J	13000 U	450 UJ
Benzo(g,h,i)Perylene	71000 JD	52000 J	7100 J	11000 J	3600 J	450 UJ
Total Number of TICs	20	20	8	13	14	21

Semivolatile Organic Analysis for Soil Samples (Continued)						
Bill's Excavating						
Semivolatile	Sample Location and Number / Concentrations in ug/kg					
	SS07	SS08	SS09	SS10	SS11	SS12 Background
Phenol	45 J	440 U	410 U	380 U	450 U	13000 U
bis(2-Chloroethyl)Ether	370 U	440 U	410 U	380 U	450 U	13000 U
2-Chlorophenol	370 U	440 U	410 U	380 U	450 U	13000 U
1,3-Dichlorobenzene	370 U	440 U	410 U	380 U	450 U	13000 U
1,4-Dichlorobenzene	370 U	440 U	410 U	380 U	450 U	13000 U
1,2-Dichlorobenzene	370 U	440 U	410 U	380 U	450 U	13000 U
2-Methylphenol	370 U	440 U	410 U	380 U	450 U	13000 U
2,2'-oxybis(1-Chloropropane	370 U	440 U	410 U	380 U	450 U	13000 U
4-Methylphenol	370 U	440 U	410 U	380 U	450 U	13000 U
n-Nitroso-Di-n-Propylamine	370 U	440 U	410 U	380 U	450 U	13000 U
Hexachloroethane	370 U	440 U	410 U	380 U	450 U	13000 U
Nitrobenzene	370 U	440 U	410 U	380 U	450 U	13000 U
Isophorone	370 U	440 U	410 U	360 J	450 U	13000 U
2-Nitrophenol	370 U	440 U	410 U	380 U	450 U	13000 U
2,4-Dimethylphenol	370 U	440 U	410 U	380 U	450 U	13000 U
bis(2-Chloroethoxy)Methane	370 U	440 U	410 U	380 U	450 U	13000 U
2,4-Dichlorophenol	370 U	440 U	410 U	380 U	450 U	13000 U
1,2,4-Trichlorobenzene	370 U	440 U	410 U	380 U	450 U	13000 U
Naphthalene	13000	38 J	75 J	3900 D	370 J	3800 J
4-Chloroaniline	370 U	440 U	410 U	380 U	450 U	13000 U
Hexachlorobutadiene	370 U	440 U	410 U	380 U	450 U	13000 U
4-Chloro-3-Methylphenol	370 U	440 U	410 U	380 U	450 U	13000 U
2-Methylnaphthalene	1500	440 U	65 J	2300	230 J	910 J
Hexachlorocyclopentadiene	370 U	440 U	410 U	380 U	450 U	13000 U
2,4,6-Trichlorophenol	370 U	440 U	410 U	380 U	450 U	13000 U
2,4,5-Trichlorophenol	900 U	1100 U	1000 U	920 U	1100 U	32000 U
2-Chloronaphthalene	370 U	440 U	410 U	380 U	450 U	13000 U
2-Nitroaniline	900 U	1100 U	1000 U	920 U	1100 U	32000 U
Dimethyl Phthalate	370 U	440 U	410 U	790	96 J	13000 U
Acenaphthylene	300 J	440 U	69 J	3200	390 J	2700 J
2,6-Dinitrotoluene	370 U	440 U	410 U	380 U	450 U	13000 U
3-Nitroaniline	900 U	1100 U	1000 U	920 U	1100 U	32000 U
Acenaphthene	370 U	440 U	410 U	380	520	13000 U
2,4-Dinitrophenol	900 U	1100 UJ	1000 U	920 U	1100 U	32000 U
4-Nitrophenol	900 U	1100 U	1000 U	920 U	1100 U	32000 U
Dibenzofuran	550	440 U	37 J	890	380 J	1000 J
2,4-Dinitrotoluene	370 U	440 U	410 U	380 U	450 U	13000 U
Diethylphthalate	370 U	440 U	410 U	380 U	450 U	13000 U
4-Chlorophenyl-phenylether	370 U	440 U	410 U	380 U	450 U	13000 U
Fluorene	370 U	440 U	410 U	300 J	490	1100 J
4-Nitroaniline	900 U	1100 U	1000 U	920 J	1100 U	32000 U
4,6-Dinitro-2-Methylphenol	900 U	1100 U	1000 U	920 U	1100 U	32000 U
n-Nitrosodiphenylamine	370 U	440 U	410 U	380 U	450 U	13000 U
4-Bromophenyl-phenylether	370 U	440 U	410 U	380 U	450 U	13000 U

Semivolatile Organic Analysis for Soil Samples (Continued)						
Bill's Excavating						
Semivolatile	Sample Location and Number / Concentrations in ug/kg					
	SS07	SS08	SS09	SS10	SS11	SS12 Background
Hexachlorobenzene	370 U	440 U	410 U	380 U	450 U	13000 U
Pentachlorophenol	900 U	1100 U	1000 U	920 U	1100 U	32000 U
Phenanthrene	1300	270 J	450	2900	6100 DJ	12000 J
Anthracene	130 J	41 J	66 J	620	1800	4300 J
Carbazole	120 J	440 U	46 J	380 U	260 J	1500 J
di-n-Butylphthalate	27 J	440 U	410 U	380 U	450 U	13000 U
Fluoranthene	1000	350 J	680	370 J	13000 DJ	24000
Pyrene	1000	550 J	750	600	20000 DJ	30000 J
Butylbenzylphthalate	370 U	440 UJ	410 U	380 U	1200	13000 UJ
3,3'-Dichlorobenzidine	370 U	440 UJ	410 U	380 U	450 U	13000 UJ
Benzo(a)Anthracene	1000	330 J	530	460	10000 DJ	15000 J
Chrysene	1500	410 J	680	5100	17000 DJ	24000 J
bis(2-Ethylhexyl)Phthalate	370 U	1500 BJ	410 UJB	1400 B	560 B	13000 UJ
di-n-Octyl Phthalate	370 UJ	440 UJ	410 U	380 UJ	450 UJ	13000 UJ
Benzo(b)Fluoranthene	3800 JD	650 J	820	2300 DJ	25000 DJ	29000 J
Benzo(k)Fluoranthene	370 UJ	440 UJ	590	380 UJ	450 UJ	13000 UJ
Benzo(a)Pyrene	960 J	340 J	340 J	3000 J	13000 DJ	15000 J
Indeno(1,2,3-cd)Pyrene	240 J	270 J	250 J	2300 J	6300 DJ	13000 J
Dibenzo(a,h)Anthracene	370 UJ	440 UJ	120 J	1000 J	1200 UJ	6200 J
Benzo(g,h,i)Perylene	370 UJ	240 J	130 J	2300 J	4500 UJ	14000 J
Total Number of TICs	20	20	20	20	20	14

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Semivolatile Organic Analysis for Soil Samples Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
Sample SS01			
9H-Fluoren-9-one	22.30	11000	JN
Unknown Polynuclear Aromatic	24.02	3200	J
Unknown Polynuclear Aromatic	24.48	4600	J
Unknown Polynuclear Aromatic	24.55	5600	J
Unknown	25.47	5500	J
Benzo[b]naphtho[2,3-d]Furan	27.27	7800	JN
Unknown	27.62	460000	J
Unknown Polynuclear Aromatic	28.48	3200	J
7h-Benz[De]Anthracen-7-one	29.63	7500	JN
Benzo[B]naphthothiophene Isom	29.88	6000	J
Unknown Polynuclear Aromatic	29.98	5900	J
Unknown	30.08	3200	J
Unknown	30.20	6400	J
Unknown	30.93	3600	J
Unknown Polynuclear Aromatic	31.10	3600	J
Unknown Polynuclear Aromatic	31.65	4400	J
Unknown Polynuclear Aromatic	33.38	4200	J
Unknown Polynuclear Aromatic	33.73	12000	J
Unknown Polynuclear Aromatic	34.00	5300	J
Unknown Polynuclear Aromatic	35.88	4100	J
Sample SS02			
Unknown	22.25	5400	J
Unknown Polynuclear Aromatic	24.43	9700	J
Unknown Polynuclear Aromatic	24.50	13000	J
Unknown Polynuclear Aromatic	24.70	17000	J
Unknown	25.47	9900	J
Unknown Polynuclear Aromatic	26.78	11000	J
Unknown	27.22	11000	J
Unknown	27.57	9400	J
Unknown Polynuclear Aromatic	28.18	14000	J
Unknown Polynuclear Aromatic	28.37	14000	J
7H-Benz[DE]Anthracen-7-One	29.57	7200	JN
Benzo[B]Naphthothiophene Isom	29.82	5500	J
Unknown Polynuclear Aromatic	29.93	9400	J
Unknown	30.13	7600	J
Unknown	30.87	9400	J
Unknown Polynuclear Aromatic	31.58	7500	J
Unknown Polynuclear Aromatic	31.88	5400	J
Unknown Polynuclear Aromatic	33.32	9200	J
Unknown Polynuclear Aromatic	33.67	20000	J
Unknown Polynuclear Aromatic	33.95	10000	J

Semivolatile Organic Analysis for Soil Samples (Continued)			
Tentatively Identified Compounds			
Bill's Excavating			
Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
Sample SS03			
Unknown Siloxane	21.58	4400	J
Unknown Siloxane	23.87	3200	J
Unknown Siloxane	27.60	3600	J
Unknown Siloxane	29.10	3400	J
Unknown Siloxane	31.62	2800	J
Unknown Polynuclear Aromatic	33.42	3000	J
Unknown Polynuclear Aromatic	33.75	11000	J
Unknown Polynuclear Aromatic	35.92	2500	J
Sample SS04			
Cyclohexen-1-ol Isomer	4.67	3300	UJB
Unknown Polynuclear Aromatic	28.38	2900	J
Unknown Polynuclear Aromatic	28.62	2600	J
Unknown Polynuclear Aromatic	29.88	2600	J
Unknown Polynuclear Aromatic	31.53	3800	J
Unknown Polynuclear Aromatic	31.62	2600	J
Unknown	32.50	2800	J
Unknown Polynuclear Aromatic	33.27	2900	J
Unknown Polynuclear Aromatic	33.60	12000	J
Unknown Polynuclear Aromatic	34.47	3600	J
Unknown Polynuclear Aromatic	34.77	2600	J
Unknown Polynuclear Aromatic	35.33	3100	J
Unknown Polynuclear Aromatic	35.78	3500	J
Sample SS05			
Unknown Siloxane	12.08	5700	J
Unknown	14.98	4100	J
Unknown Siloxane	15.67	6100	UJB
Unknown Siloxane	21.57	6200	J
Unknown Alkane	22.03	6100	J
Unknown Siloxane	23.83	4800	J
Unknown Siloxane	25.82	3200	J
Unknown Siloxane	27.57	5500	J
Unknown Alkane	28.20	3800	J
Unknown Siloxane	29.07	4700	J
Unknown Alkane	29.18	3000	J
Unknown Siloxane	30.38	4100	J
Unknown Siloxane	31.58	3800	J
Unknown Polynuclear Aromatic	33.72	5200	J

Semivolatile Organic Analysis for Soil Samples (Continued) Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
SS06			
Unknown	5.87	2100	UJB
1-Methyl Naphthalene	15.12	3700	JN
Unknown Alkane	17.08	2100	J
Dimethyl Naphthalene Isomer	17.28	2400	J
Unknown Alkane	18.92	2500	J
Unknown Alkane	20.58	2100	J
Unknown Alkane	22.12	2700	J
Unknown Alkane	22.20	3400	J
Unknown Alkane	23.53	2300	J
Unknown Polynuclear Aromatic	24.73	2100	J
Unknown Polynuclear Aromatic	24.82	3400	J
Unknown Alkane	24.90	3300	J
Unknown Polynuclear Aromatic	25.07	1900	J
Unknown Polynuclear Aromatic	25.13	2100	J
Unknown Polynuclear Aromatic	26.18	3200	J
Unknown Alkane	27.35	3300	J
Unknown Alkane	28.43	3000	J
Unknown Alkane	29.42	3200	J
Unknown Alkane	30.35	3100	J
Unknown Alkane	31.23	3300	J
Unknown Alkane	32.05	2300	J
SS07			
Unknown	5.85	1100	UJB
Unknown Alkane	10.65	650	J
1-Methyl Naphthalene	15.07	1300	JN
Unknown Alkane	17.03	590	J
Dimethyl Naphthalene Isomer	17.22	690	J
Unknown Alkane	18.18	700	J
Unknown Alkane	18.85	670	J
Unknown Alkane	20.52	680	J
Unknown Alkane	22.07	1300	J
Unknown Alkane	22.15	2300	J
Unknown Alkane	23.48	1100	J
Unknown Alkane	24.85	1100	J
Unknown Alkane	26.10	920	J
Unknown Alkane	27.28	1000	J
Unknown Alkane	28.35	910	J
Unknown Alkane	29.35	720	J
Unknown Alkane	30.28	720	J
Unknown Alkane	31.15	770	J
Unknown Alkane	31.97	620	J
Unknown Alkane	32.77	640	J

Semivolatile Organic Analysis for Soil Samples (Continued)			
Tentatively Identified Compounds			
Bill's Excavating			
Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
SS08			
Cyclohexen-1-ol Isomer	4.95	190	UJB
Unknown	5.78	1900	UJB
Unknown	6.12	330	J
Unknown	6.63	300	J
Unknown	7.92	450	UJB
Unknown	25.38	530	J
Unknown Organic Acid	25.52	540	J
Unknown	27.62	610	J
Unknown	27.83	340	J
Unknown	30.40	260	J
Unknown	31.00	280	J
Unknown Polynuclear Aromatic	33.75	540	J
Unknown Alkane	34.10	760	J
Unknown Alkane	35.48	730	J
Unknown	36.72	1900	J
Unknown	37.07	1500	J
Unknown	37.22	370	J
Unknown	37.33	430	J
Unknown	37.65	710	J
Unknown	38.02	790	J
SS09			
Cyclohexen-1-ol Isomer	4.88	150	UJB
Unknown	5.72	1500	UJB
Unknown	6.03	170	J
5,5-Dimethyl-2(5h)-Furanone	6.57	190	UJNB
Unknown	7.85	300	JB
Unknown Siloxane	15.57	150	J
Unknown Alkane	21.95	180	J
Unknown Polynuclear Aromatic	24.43	260	J
Unknown Polynuclear Aromatic	24.50	250	J
Unknown Alkane	24.62	180	J
Unknown Polynuclear Aromatic	24.75	140	J
Unknown	25.08	180	J
Unknown Organic Acid	25.43	220	UJB
Unknown Alkane	25.90	130	J
Unknown Polynuclear Aromatic	26.22	140	J
Unknown Alkane	28.13	200	J
Unknown	30.68	290	J
Unknown Alkane	31.75	190	J
Unknown Alkane	32.55	250	J
Unknown Polynuclear Aromatic	33.70	530	J

Semivolatile Organic Analysis for Soil Samples (Continued)			
Tentatively Identified Compounds			
Bill's Excavating			
Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
SS10			
Unknown	5.80	4400	UJB
1-Propyl Benzene	9.02	5200	JN
1-Methyl Naphthalene	15.03	2100	JN
Unknown	16.68	6500	J
Unknown	18.60	6500	J
Unknown	19.10	2700	J
Unknown Alkane	20.52	2200	J
Unknown	21.28	2500	J
Unknown	21.85	3000	J
Unknown	22.08	3000	J
Unknown Alkane	22.17	4800	J
Unknown	22.48	1600	J
Unknown Alkane	23.53	2300	J
Unknown Alkane	23.67	3600	J
Unknown	24.80	2100	J
Unknown	24.85	3300	J
Unknown	26.20	2300	J
Unknown Polynuclear Aromatic	26.88	4300	J
Unknown	27.50	2900	J
Unknown	30.37	1700	J
SS11			
Unknown	5.78	1900	UJB
Unknown	7.97	550	UJB
1-Propynyl Benzene	8.98	610	JN
Unknown	22.42	590	J
Unknown Polynuclear Aromatic	24.62	260	J
Unknown Polynuclear Aromatic	24.68	370	J
Unknown Polynuclear Aromatic	24.80	300	J
Unknown Polynuclear Aromatic	24.90	470	J
Unknown Polynuclear Aromatic	25.00	300	J
Unknown Polynuclear Aromatic	25.62	350	J
Unknown	27.83	380	J
Unknown	28.05	230	J
Unknown Polynuclear Aromatic	28.47	640	J
Unknown Polynuclear Aromatic	28.70	410	J
Unknown	28.78	250	J
Unknown Polynuclear Aromatic	28.95	240	J
Unknown	29.88	260	J
Unknown	30.10	270	J
Unknown Polynuclear Aromatic	30.22	610	J
Unknown Polynuclear Aromatic	31.08	210	J

Semivolatile Organic Analysis for Soil Samples (Continued)			
Tentatively Identified Compounds			
Bill's Excavating			
Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
SS12			
Background			
Cyclohexen-1-ol Isomer	4.73	2700	UJB
Unknown	18.27	2900	J
Unknown	21.57	2800	J
Unknown Polynuclear Aromatic	26.85	3300	J
Unknown	27.27	2700	J
Unknown Polynuclear Aromatic	28.25	3000	J
Unknown	29.63	2600	J
Unknown Polynuclear Aromatic	29.98	3700	J
Unknown	31.12	2600	J
Unknown Polynuclear Aromatic	33.37	5200	J
Unknown Polynuclear Aromatic	33.72	16000	J
Unknown Polynuclear Aromatic	35.88	4100	J
Unknown Polynuclear Aromatic	36.35	3400	J
Unknown Polynuclear Aromatic	36.70	2700	J

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Pesticide/PCB Analysis for Soil Samples						
Bill's Excavating						
Pesticide/ PCB	Sample Location and Number					
	Concentrations in ug/kg					
	SS01	SS02	SS03	SS04	SS05	SS06
Alpha-BHC	4.2 UJ	2.2 UJ	2.0 RU	2.2 UJ	2.2 RU	2.3 UJ
Beta-BHC	4.2 UJ	2.2 UJ	2.0 RU	2.2 UJ	2.2 RU	2.3 UJ
Delta-BHC	4.2 UJ	3.3 JPX	2.0 RU	3.8 JPX	2.2 RU	2.3 UJ
Gamma-BHC (Lindane)	4.2 UJ	4.0 JPX	2.0 RU	2.2 UJ	2.2 RU	2.3 UJ
Heptachlor	45 JPX	8.0 JPX	3.7 JPX	4.8 JPX	2.2 RU	2.3 UJ
Aldrin	120 JP	7.5 JP	9.7 J	6.2 JP	29 JP	20 JP
Heptachlor Epoxide	4.2 UJ	4.8 JPX	2.0 RU	2.2 UJ	2.2 RU	2.3 UJ
Endosulfan I	4.2 UJ	3.1 JPX	2.0 RU	2.2 UJ	5.1 JP	4.2 JPX
Dieldrin	8.2 UJ	4.2 UJ	3.9 JPX	8.0 JPX	4.6 JPX	7.8 JPX
4,4'-DDE	170 JPDY	14 JPX	7.1 JPX	14 JP	4.8 JPX	5.3 JPX
Endrin	230 JPD	21 JP	19 JPX	13 JPX	17 JPX	20 JPX
Endosulfan II	54 JPX	5.3 JPX	9.2 JP	6.2 JP	6.1 JPX	14 JP
4,4'-DDD	21 JPX	4.2 UJ	7.4 JP	4.2 UJ	4.3 RU	4.5 UJ
Endosulfan Sulfate	8.2 UJ	4.2 UJ	3.9 RU	7.4 JPX	4.3 RU	4.5 UJ
4,4'-DDT	21 UJ	6.3 JP	3.9 RU	21 JP	9.4 JPX	26 J
Methoxychlor	42 UJ	22 UJ	2 RU	22 UJ	22 RU	23 UJ
Endrin Ketone	97 JPX	19 JPX	15 J	7.9 JPX	7.7 JP	12 JPX
Endrin Aldehyde	210 DJ	4.2 UJ	4.7 JPX	4.2 UJ	4.3 RU	16 JPX
Alpha-Chlordane	4.2 UJ	2.2 UJ	2.0 RU	13 J	2.2 RU	2.3 UJ
Gamma-Chlordane	4.2 UJ	3.5 JPX	9.2 J	20 J	2.2 RU	5.5 JP
Toxaphene	420 UJ	220 UJ	200 RU	220 UJ	220 RU	230 UJ
Aroclor-1016	82 UJ	42 UJ	39 RU	42 UJ	43 RU	45 UJ
Aroclor-1221	170 UJ	86 UJ	80 RU	86 UJ	88 RU	91 UJ
Aroclor-1232	82 UJ	42 UJ	39 RU	42 UJ	43 RU	45 UJ
Aroclor-1242	82 UJ	42 UJ	39 RU	42 UJ	43 RU	45 UJ
Aroclor-1248	82 UJ	42 UJ	39 RU	42 UJ	43 RU	45 UJ
Aroclor-1254	82 UJ	42 UJ	39 RU	42 UJ	43 RU	45 UJ
Aroclor-1260	82 UJ	42 UJ	39 RU	42 UJ	43 RU	45 UJ

Pesticide/PCB Analysis for Soil Samples (Continued)						
Bill's Excavating						
Pesticide/ PCB	Sample Location and Number					
	Concentrations in ug/kg					
	SS07	SS08	SS09	SS10	SS11	SS12 Background
Alpha-BHC	1.9 UJ	2.3 UJ	2.1 UJ	2.0 UJ	2.3 RU	2.2 RU
Beta-BHC	1.9 UJ	2.3 UJ	2.1 UJ	2.0 UJ	2.3 UJ	2.2 RU
Delta-BHC	1.9 UJ	2.3 UJ	2.1 UJ	2.0 UJ	3.0 JPX	11 JPX
Gamma-BHC (Lindane)	1.9 UJ	2.3 UJ	2.1 UJ	2.0 UJ	2.3 RU	3.8 JPX
Heptachlor	1.9 JP	2.3 UJ	2.1 UJ	2.1 JPX	4.5 JPX	8.9 JPX
Aldrin	10 UJ	2.3 UJ	5.5 JP	3.3 JP	6.8 JP	14 J
Heptachlor Epoxide	1.9 UJ	2.3 UJ	4.0 JPX	2.0 UJ	2.3 RU	2.2 RU
Endosulfan I	1.9 JPX	2.3 UJ	2.1 UJ	2.0 UJ	2.3 RU	8.7 JP
Dieldrin	5.3 UJ	4.4 UJ	4.1 UJ	3.8 UJ	4.5 RU	4.2 RU
4,4'-DDE	3.7 JP	7.4 J	4.1 UJ	3.8 UJ	6.2 JPX	23 J
Endrin	13 J	4.4 UJ	4.1 UJ	6.8 JP	21 JP	23 JP
Endosulfan II	6.8 UJ	4.4 UJ	4.1 UJ	3.9 J	9.4 JPX	5.7 JPX
4,4'-DDD	3.7 UJ	4.4 UJ	4.1 UJ	3.8 UJ	4.5 RU	4.2 RU
Endosulfan Sulfate	3.7 JPX	4.8 JPX	4.1 UJ	4.2 JPX	32 JPX	14 JPX
4,4'-DDT	4.1 UJ	5.3 JPX	4.6 JPX	3.8 UJ	20 JPX	16 JPX
Methoxychlor	19 JP	23 UJ	21 UJ	20 UJ	23 RU	22 RU
Endrin Ketone	6.2 UJ	4.4 UJ	4.1 UJ	3.8 UJ	15 JP	29 JP
Endrin Aldehyde	3.9 JP	4.4 UJ	4.1 UJ	3.8 UJ	13 JPX	25 JP
Alpha-Chlordane	1.9 UJ	2.3 UJ	2.1 UJ	2.0 UJ	7.9 J	4.2 JPX
Gamma-Chlordane	1.9 UJ	2.3 UJ	2.1 UJ	2.0 UJ	9.1 JP	5.5 JPX
Toxaphene	190 UJ	230 UJ	210 UJ	200 UJ	230 RU	220 RU
Aroclor-1016	37 UJ	44 UJ	41 UJ	38 UJ	45 RU	42 RU
Aroclor-1221	75 UJ	89 UJ	84 UJ	77 UJ	91 RU	85 RU
Aroclor-1232	37 UJ	44 UJ	41 UJ	38 UJ	45 RU	42 RU
Aroclor-1242	37 UJ	44 UJ	41 UJ	38 UJ	45 RU	42 RU
Aroclor-1248	37 UJ	44 UJ	41 UJ	38 UJ	45 RU	42 RU
Aroclor-1254	37 UJ	44 UJ	41 UJ	38 UJ	290 UJP	42 RU
Aroclor-1260	37 UJ	44 UJ	41 UJ	38 UJ	45 RU	42 RU

Inorganic Analysis for Soil Samples Bill's Excavating								
Metals and Cyanide	Sample Locations and Number Concentrations in mg/kg							
	SS01	SS02	SS03	SS04	SS05	SS06	SS07	SS08
Aluminum	6080	14200	14700	11000	5770	2650	16400	11300
Antimony	8.5 JNB	6.9 UJN	6.2 UJN	6.6 UJN	6.9 UJN	7.6 UJN	8.4 JNB	6.8 UJN
Arsenic	17.1 JNBW	9.3 JNB	7.9 JNB	8.7 JNS	52.1 NJS	19.4 JNBW	5.6 JNS	6.2 JNS
Barium	110 JE	155 JE	154 JE	274 JE	164 JE	97.0 JE	200 JE	115 JE
Beryllium	0.79 B	2.2	2.2	0.93 B	1.6	1.2 B	3.2	0.73 JB
Cadmium	10.4	6.6	3.5	1.0 U	1.8	1.4 B	0.88 U	1.0 U
Calcium	4730 JE*	48100 JE*	45800 JE*	47300 JE*	13000 JE*	4090 JE*	102000 JE*	15100 JE*
Chromium	12.0	18.2	23.1	24.7	22.1	13.3	11.8	19.2
Cobalt	11.8 B	7.2 B	10.9 B	9.8 B	8.9 B	7.0 B	4.4 B	7.6 B
Copper	174 JE	83.0 JE	118 JE	75.0 JE	181 JE	64.8 JE	49.4 JE	39.0 JE
Iron	20300 JE	31800 JE	94700 JE	32200 JE	42600 JE	14100 JE	28200 JE	18400 JE
Lead	653	201	300	198	176	82.8	73.8	62.7 S
Magnesium	2090 JE	13900 JE	18400 JE	17700 JE	2580 JE	950 JBE	21700 JE	8540 JE
Manganese	608 JE	1000 JE	1800 E	564 JE	713 JE	152 JE	2480 JE	273 JE
Mercury	1.1 JN	4.4 NJ	4.1 JN	0.86 JN	0.62 JN	1.1 JN	0.39 JN	0.17 JN
Nickel	7.5 B	28.5	22.2	28.7	19.1	16.6	7.4 B	20.8
Potassium	1420	1710	3930	2050	616 B	742 B	1840	2340
Selenium	0.66 JNB	0.68 JNBW	0.80 JNBW	0.89 JNB	1.5 JN	0.70 JBN+	1.6 JNS	0.38 JNB
Silver	9.1	0.98 U	4.5	1.4 B	2.0 B	1.1 U	1.4 B	0.96 U
Sodium	204 B	556 B	1290	312 B	204 B	116 B	639 B	78.1 B
Thallium	2.3 UNR	0.31 JNBW	2.2 UNR	0.23 UNRW	0.24 UNRW	0.27 URWN	0.20 UNWR	0.24 JNB
Vanadium	27.5	42.5	22.7	26.7	14.2	14.6 B	13.4	25.1
Zinc	680 JE	528 JE	349 JE	291 JE	529 JE	155 JE	140 JE	138 JE
Cyanide	9.7	15.8	17.5	1.8	6.9	2.6	5.7	0.67 U

Inorganic Analysis for Soil Samples (Continued)				
Bill's Excavating				
Metals and Cyanide	Sample Locations and Number Concentrations in mg/kg			
	SS09	SS10	SS11	SS12 Background
Aluminum	7600	19400	11800	15000
Antimony	6.4 UJN	5.9 UJN	6.8 UJN	6.2 UJN
Arsenic	13.0 JNS	12.5 JNBW	16.8 JN+	18.9 JNS
Barium	141 JE	267 JE	328 JE	311 JE
Beryllium	1.4	3.1	1.1 B	2.5
Cadmium	0.98 U	0.89 U	4.4	42.6
Calcium	26400 JE*	87500 JE*	42000 JE*	35900 JE*
Chromium	13.4	17.4	46.2	33.0
Cobalt	6.8 B	6.9 B	17.7	12.2
Copper	93.1 JE	139 JE	651 JE	84.5 JE
Iron	31600 JE	33900 JE	91400 JE	84100 JE
Lead	275	148	885	151
Magnesium	2850 JE	21500 JE	13400 JE	5130 JE
Manganese	894 JE	1390 JE	933 JE	4780 JE
Mercury	0.52 JN	0.41 JN	1.4 JN	16.8 JN
Nickel	16.7	17.6	175	28.5
Potassium	698 B	1470	1820	1910
Selenium	1.1 JNB	3.0 JNS	0.54 JNB	1.9 JN
Silver	1.6 B	1.7 B	4.6	4.8
Sodium	289 B	1000 B	610 B	999 B
Thallium	0.23 UNWR	2.1 UNR	2.4 UNR	2.2 UNR
Vanadium	10.9 B	12.7	21.1	47.3
Zinc	241 JE	241 JE	2840 JE	196 JE
Cyanide	22.6	8.7	5.6	15.3

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Dioxin Analysis for Soil Samples Bill's Excavating		
PCDD/PCDF Analyte	Sample Location Concentrations in ug/kg	
	SS11	SS12 Background
2378-TCDD	0.007 J	0.006 U
2378-TCDF	0.212 J	0.004 U
12378-PeCDF	0.038 J	0.008 U
12378-PeCDD	0.018 J	0.014 U
23478-PeCDF	0.082 J	0.008 U
123478-HxCDF	0.285 JS	0.031 U
123678-HxCDF	0.058 JS	0.018 U
123478-HxCDD	0.02 JS	0.034 U
123678-HxCDD	0.059 J	0.05 JS
123789-HxCDD	0.034 JSPR	0.054 J
234678-HxCDF	0.086 JS	0.027 U
123789-HxCDF	0.017 U	0.029 U
1234678-HpCDF	0.216 J	0.046 J
1234678-HpCDD	0.733 J	0.276 J
1234789-HpCDF	0.027 U	0.044 U
OCDD	9.239 J	1.734 J
OCDF	0.251 J	0.096 U

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Volatile Organic Analysis for Sediment Samples Bill's Excavating					
Volatile Compound	Sample Locations and Number / Concentration in ug/kg				
	ST02 Background	ST03	ST04	ST05	ST06*
Chloromethane	16 U	26 U	15 U	16 U	5 UJ
Bromomethane	16 U	26 U	15 U	16 U	5 UJ
Vinyl Chloride	16 U	26 U	15 U	16 UJ	5 UJ
Chloroethane	16 UJ	26 UJ	15 UJ	16 UJ	5 UJ
Methylene Chloride	16 UJ	26 U	15 U	16 U	2.5 UJ
Acetone	62 UJB	26 UJ	15 UJ	16 UJ	5 UJ
Carbon Disulfide	16 U	26 U	15 U	16 U	2.5 UJ
1,1-Dichloroethene	16 U	26 U	15 U	16 U	2.5 UJ
1,1-Dichloroethane	16 U	26 U	15 U	16 U	2.5 UJ
1,2-Dichloroethene (total)	16 U	26 U	15 U	16 U	2.5 UJ
Chloroform	16 U	26 U	15 U	16 U	2.5 UJ
1,2-Dichloroethane	16 U	26 U	15 U	16 U	2.5 UJ
2-Butanone	15 J	26 UJ	15 UJ	16 UJ	9 UJB
1,1,1-Trichloroethane	16 U	26 U	15 U	16 U	2.5 UJ
Carbon Tetrachloride	16 U	26 U	15 U	16 U	2.5 UJ
Vinyl Acetate**	--	--	--	--	5 UJ
Bromodichloromethane	16 U	26 U	15 U	16 U	2.5 UJ
1,2-Dichloropropane	16 U	26 U	15 U	16 U	2.5 UJ
cis-1,3-Dichloropropene	16 U	26 U	15 U	16 U	2.5 UJ
Trichloroethene	16 U	26 U	15 U	16 U	2.5 UJ
Dibromochloromethane	16 U	26 U	15 U	16 U	2.5 UJ
1,1,2-Trichloroethane	16 U	26 U	15 U	16 U	2.5 UJ
Benzene	16 U	26 U	15 U	16 U	2.5 UJ
trans-1,3-Dichloropropene	16 U	26 U	15 U	16 U	2.5 UJ
Bromoform	16 U	26 U	15 U	16 U	2.5 UJ
4-Methyl-2-Pentanone	16 U	26 UJ	15 UJ	16 UJ	5 UJ
2-Hexanone	16 U	26 UJ	15 UJ	16 UJ	5 UJ
Tetrachloroethene	16 U	26 U	15 U	16 U	2.5 UJ
1,1,2,2-Tetrachloroethane	16 U	26 U	15 U	16 UJ	2.5 UJ
Toluene	6 J	26 U	15 U	16 U	2 J
Chlorobenzene	16 U	26 U	15 U	16 U	2.5 UJ
Ethylbenzene	16 U	26 U	15 U	16 U	12 JB
Styrene	16 U	26 U	15 U	16 U	2.5 UJ
Xylene (total)	16 U	26 U	15 U	16 U	40 J
Total Number of TICs ***	6	0	0	0	7

*Sediment Sample ST06 was analyzed as a high concentration sample.

**Only ST06 was analyzed for this substance.

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***Number, not concentrations, of tentatively identified compounds (TICs).

Volatile Organic Analysis for Sediment Samples Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample ST02 Background		
Unknown	9.28	9 J
Unknown	10.20	11 J
Unknown	11.12	20 J
Unknown	11.50	13 J
Unknown	11.97	11 J
Unknown	12.38	11 J
Sample ST06*		
Benzene, 1-ethyl-4-methyl	22.800	31 J
Benzene, 1,2,3-Trimethyl	22.990	15 J
Benzene, 1-ethyl-4-methyl	23.375	13 J
Benzene, 1,2,3-Trimethyl	23.775	45 J
Benzene, 1,2,3-Trimethyl	24.644	11 J
1H-Indene, 2,3-Dihydro	25.034	10 J
Benzene, 1-Ethyl-3,5-Dimethyl	25.404	12 J

*Sediment sample ST06 was analyzed as a high concentration sample.

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Semivolatile Organic Analysis for Sediment Samples					
Bill's Excavating					
Semivolatile Compound	Sample Location and Number / Concentrations in µg/kg				
	ST02 Background	ST03	ST04	ST05	ST06*
Phenol	540 UJ	850 U	490 U	520 U	20 U
bis(2-Chloroethyl)Ether	540 U	850 U	490 U	520 U	20 U
2-Chlorophenol	540 U	850 U	490 U	520 U	20 U
1,3-Dichlorobenzene	540 U	850 U	490 U	520 U	20 U
1,4-Dichlorobenzene	540 UJ	850 U	490 U	520 U	20 U
Benzyl alcohol**	---	---	---	---	20 U
1,2-Dichlorobenzene	540 U	850 U	490 U	520 U	20 U
2-Methylphenol	540 U	850 U	490 U	520 U	20 U
2,2'-oxybis(1-Chloropropane)	540 U	850 U	490 U	520 U	20 U
bis(2-Chloroisopropyl)ether**	---	---	---	---	20 U
4-Methylphenol	540 U	850 U	490 U	520 U	20 U
n-Nitroso-Di-n-Propylamine	540 UJ	850 U	490 U	520 U	20 U
Hexachloroethane	540 U	850 U	490 U	520 U	20 U
Nitrobenzene	540 U	850 U	490 U	520 U	20 U
Isophorone	540 U	850 U	490 U	520 U	20 U
2-Nitrophenol	540 U	850 U	490 U	520 U	20 U
2,4-Dimethylphenol	540 U	850 U	490 U	520 U	20 U
Benzoic acid**	---	---	---	---	100 U
bis(2-Chloroethoxy)Methane	540 U	850 U	490 U	520 U	20 U
2,4-Dichlorophenol	540 U	850 U	490 U	520 U	20 U
1,2,4-Trichlorobenzene	540 UJ	850 U	490 U	520 U	20 U
Naphthalene	540 U	850 U	31 J	520 U	37
4-Chloroaniline	540 U	850 U	490 U	520 U	20 U
Hexachlorobutadiene	540 U	850 U	490 U	520 U	20 U
4-Chloro-3-Methylphenol	540 U	850 U	490 U	520 U	20 U
2-Methylnaphthalene	540 U	850 U	49 J	520 U	20 U
Hexachlorocyclopentadiene	540 UJ	850 UJ	490 UJ	520 UJ	20 U
2,4,6-Trichlorophenol	540 U	850 U	490 U	520 U	20 U
2,4,5-Trichlorophenol	1300 U	2100 U	1200 U	1300 U	100 U
2-Chloronaphthalene	540 U	850 U	490 U	520 U	20 U
2-Nitroaniline	1300 U	2100 U	1200 U	1300 U	100 U
Dimethyl Phthalate	540 U	850 U	490 U	520 U	20 U
Acenaphthylene	540 U	850 U	490 U	520 U	17 J
2,6-Dinitrotoluene	540 U	850 U	490 U	520 U	20 U
3-Nitroaniline	1300 U	2100 U	1200 U	1300 U	100 U
Acenaphthene	540 UJ	850 U	490 U	520 U	15 J
2,4-Dinitrophenol	1300 RUJ	2100 RUJ	1200 RUJ	1300 RUJ	100 U
4-Nitrophenol	1300 U	2100 U	1200 U	1300 U	100 U
Dibenzofuran	540 U	850 U	490 U	520 U	13 U
2,4-Dinitrotoluene	540 UJ	850 U	490 U	520 U	20 U
Diethylphthalate	540 U	850 U	490 U	520 U	20 U
4-Chlorophenyl-phenylether	540 U	850 U	490 U	520 U	20 U
Fluorene	540 U	850 U	490 U	520 U	39

Semivolatile Organic Analysis for Sediment Samples Bill's Excavating					
Semivolatile Compound	Sample Location and Number / Concentrations in ug/kg				
	Background	ST03	ST04	ST05	ST06*
4-Nitroaniline	1300 U	2100 U	200 U	1300 U	100 U
4,6-Dinitro-2-Methylphenol	1300 UJ	2100 UJ	200 UJ	1300 UJ	100 U
n-Nitrosodiphenylamine	540 UJ	850 U	490 U	520 U	20 U
4-Bromophenyl-phenylether	540 U	850 U	490 U	520 U	20 U
Hexachlorobenzene	540 U	850 U	490 U	520 U	20 U
Pentachlorophenol	1300 U	2100 U	400 J	1300 U	100 U
Phenanthrene	170 J	330 J	430 J	210 J	43
Anthracene	37 J	83 J	150 J	57 J	22
Carbazole	540 U	850 U	40 J	520 U	---
di-n-Butylphthalate	540 U	850 U	490 U	520 U	20 U
Fluoranthene	350 J	660 J	610	390 J	170
Monochlorobiphenyl**	---	---	---	---	100 U
Dichlorobiphenyl**	---	---	---	---	100 U
Trichlorobiphenyl**	---	---	---	---	100 U
Tetrachlorobiphenyl**	---	---	---	---	100 U
Pentachlorobiphenyl**	---	---	---	---	100 U
Hexachlorobiphenyl**	---	---	---	---	100 UJ
Heptachlorobiphenyl**	---	---	---	---	100 UJ
Octachlorobiphenyl**	---	---	---	---	200 U
Nanochlorobiphenyl**	---	---	---	---	200 U
Decachlorobiphenyl**	---	---	---	---	200 U
Pyrene	340 J	820 J	690	410 J	130
Butylbenzylphthalate	540 UJ	850 UJ	490 UJ	520 UJ	20 U
3,3'-Dichlorobenzidine	540 U	850 U	490 U	520 U	40 U
Benzo(a)Anthracene	170 J	390 J	350 J	180 J	72
Chrysene	180 J	450 J	450 J	270 J	95
bis(2-Ethylhexyl)Phthalate	130 J	1000	79 J	73 J	83
di-n-Octyl Phthalate	540 UJ	850 UJ	490 UJ	520 UJ	20 U
Benzo(b)Fluoranthene	160 J	420 J	320 J	290 J	130
Benzo(k)Fluoranthene	50 J	160 J	140 J	520 U	92
Benzo(a)Pyrene	130 J	360 J	270 J	160 J	110
Indeno(1,2,3-cd)Pyrene	87 J	280 J	230 J	120 J	84
Dibenzo(a,h)Anthracene	540 U	850 U	490 U	520 U	19 J
Benzo(g,h,i)Perylene	130 J	360 J	300 J	160 J	77
Total Number of TICs ***	12	18	19	19	20

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* Sediment sample ST06 was analyzed as a high concentration sample.

** Only ST06 was analyzed for this substance.

***Number, not concentrations, of tentatively identified compounds (TICs).

Semivolatile Organic Analysis for Sediment Samples		
Bill's Excavating		
Tentatively Identified Compounds (Concentrations in ug/kg)		
Compound Name	Retention Time	Estimated Concentration
Sample ST02		
Background		
Unknown	4.60	160 UJB
Ketone	5.28	330 AJ
Aliphatic Hydrocarbon	16.30	110 J
Sulfur, Mol. (S8)	19.90	270 JN
Unknown	25.20	150 J
Unknown	26.03	110 J
Unknown	26.30	160 J
Aliphatic Hydrocarbon	26.68	440 J
Unknown	26.90	270 J
Unknown	27.87	110 J
Aliphatic Compound	28.23	380 J
Unknown	28.50	160 J
Sample ST03		
Unknown	4.63	580 UJB
Ketone	5.30	1000 JA
Ketone	5.57	300 JA
Ketone	6.23	280 JA
Sulfur, Mol. (S8)	19.92	340 JN
Unknown	20.03	540 J
Unknown	20.27	300 J
Unknown	22.95	800 J
Unknown	23.68	210 J
Unknown	25.23	910 J
Unknown	26.05	720 J
Polyaromatic Hydrocarbon	26.32	340 J
Aliphatic Hydrocarbon	26.70	2400 J
Unknown	26.83	590 J
Unknown	27.45	400 J
Unknown	27.87	410 J
Unknown	28.23	1200 J
Unknown	28.50	420 J
Sample ST04		
Unknown	4.42	190 UJN
Ketone	5.13	390 JA
Unknown	6.00	1700 J
Unknown	15.68	100 J
Aliphatic Hydrocarbon	16.32	240 J
Unknown	17.42	120 J
Unknown	17.78	130 J
Unknown	18.17	120 J
Sulfur, Mol (S8)	19.93	330 JN
Unknown	20.30	190 J

Semivolatile Organic Analysis for Sediment Samples Bill's Excavating Tentatively Identified Compounds (Concentrations in ug/kg)		
Compound Name	Retention Time	Estimated Concentration
Sample ST04 (Continued)		
Unknown	26.08	450 J
Polyaromatic Hydrocarbon	26.35	440 J
Unknown	26.65	660 J
Unknown	26.75	1200 J
Unknown	26.97	580 J
Unknown	27.50	340 J
Unknown	27.90	1000 J
Unknown	28.30	800 J
Unknown	28.55	1100 J
Sample ST05		
Unknown	4.65	200 UJB
Ketone	5.32	400 JA
Ketone	5.58	160 JA
Unknown	6.23	140 J
Aliphatic Hydrocarbon	16.32	120 J
Sulfur, Mol. (S8)	19.92	230 JN
Unknown	24.73	1100 J
Aliphatic Hydrocarbon	25.23	370 J
Unknown	25.97	210 J
Unknown	26.05	180 J
Unknown	26.25	190 J
Polyaromatic Hydrocarbon	26.32	180 J
Aliphatic Hydrocarbon	26.70	1400 J
Unknown	26.80	1900 J
Unknown	27.45	150 J
Unknown	27.77	310 J
Aliphatic Hydrocarbon	28.23	670 J
Polyaromatic Hydrocarbon	29.27	280 J
Unknown	29.53	410 J
Sample ST06*		
Unknown Organic Acid	4.902	22 J
Benzene, 1,2,3-trimethyl-	10.109	8 JN
Benzene, 1,2,4-trimethyl-	10.972	14 JN
Unknown Hydrocarbon	12.087	12 J
Unknown	12.609	16 J
Ethanone, 1-phenyl-	12.921	9 JN
Cyclopentasiloxane, dacetmet	15.242	38 JN
Unknown	15.463	14 J
Cyclohexasiloxane, dodecane	19.285	10 JN
Dibenzofuran, 4-methyl-	25.660	9 JN
4H-Cyclopenta(def)phenanthr	30.571	33 JN
Naphthalene, 2-phenyl-	31.235	12 JN

Semivolatile Organic Analysis for Sediment Samples		
Bill's Excavating		
Tentatively Identified Compounds (Concentrations in ug/kg)		
Compound Name	Retention Time	Estimated Concentration
Sample ST06 (Continued)		
Unknown PAH	32.471	14 J
Benzo(b)naphto(2,3-d)furan	32.798	21 JN
11H-Benzo(a)fluorene	33.566	36 JN
Pyrene, 1-methyl-	33.699	29 JN
Unknown	34.458	15 J
Benzo(b)naphtho(2,1-d)thiop	34.786	10 JN
Cyclopenta(cd)pyrene	64.869	15 JN
Chrysene, 1-methyl-	36.162	12 JN

*Sediment Sample ST06 was analyzed as a high concentration sample.

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Pesticide/PCB Analysis for Sediment Samples					
Bill's Excavating					
Pesticide/PCB	Sample Location and Number / Concentrations in ug/kg				
	ST02 Background	ST03	ST04	ST05	ST06*
Alpha-BHC	2.8 UJ	4.4 UJ	2.5 UJ	2.7 UJ	20 U
Beta-BHC	2.8 UJ	4.4 UJ	2.5 UJ	2.7 UJ	20 U
Delta-BHC	0.23 JP	2.1 JP	0.89 JP	0.93 JP	20 U
Gamma-BHC (Lind.)	2.8 UJ	4.4 UJ	2.5 UJ	2.7 UJ	20 U
Heptachlor	0.46 J	0.77 J	2.5 UJ	2.7 UJ	20 U
Aldrin	2.8 UJ	4.4 UJ	2.5 UJ	2.7 UJ	20 U
Heptachlor Epoxide	0.30 JP	0.57 JP	1.0 JP	1.5 JP	20 U
Endosulfan I	2.8 UJ	4.4 UJ	2.5 UJ	2.7 UJ	20 U
Dieldrin	3.4 JP	4.3 JP	4.5 J	4.2 JP	20 U
4,4'-DDE	1.6 JP	3.8 JP	2.8 JP	1.3 JP	20 U
Endrin	5.5 UJ	8.5 UJ	4.9 UJ	5.2 UJ	20 U
Endosulfan II	5.5 UJ	8.5 UJ	4.9 UJ	5.2 UJ	20 U
4,4'-DDD	2.3 JP	12 P	12 P	5.2 UJ	20 U
Endosulfan Sulfate	5.5 UJ	5.5 J	5.3 P	2.2 JP	20 U
4,4'-DDT	5.5 UJ	8.5 UJ	4.9 UJ	5.2 UJ	20 U
Methoxychlor	28 UJ	44 UJ	25 UJ	27 UJ	20 U
Endrin Ketone	5.5 UJ	8.5 UJ	4.9 UJ	5.2 UJ	20 U
Endrin Aldehyde	5.5 UJ	8.5 UJ	4.9 UJ	5.2 JP	---
Alpha-Chlordane	2.8 UJ	3.6 JP	3.4 P	2.8 P	20 U
Gamma-Chlordane	2.8 UJ	3.4 JP	2.5 JP	2.4 JP	20 U
Toxaphene	280 UJ	440 UJ	250 UJ	270 UJ	50 U
Aroclor-1016	55 UJ	85 UJ	49 UJ	52 UJ	10 U
Aroclor-1221	110 UJ	170 UJ	100 UJ	110 UJ	10 U
Aroclor-1232	55 UJ	85 UJ	49 UJ	52 UJ	10 U
Aroclor-1242	55 UJ	85 UJ	49 UJ	52 UJ	10 U
Aroclor-1248	55 UJ	85 UJ	49 UJ	52 UJ	10 U
Aroclor-1254	55 UJ	85 UJ	49 UJ	52 UJ	10 U
Aroclor-1260	55 UJ	85 UJ	49 UJ	52 UJ	10 U

* Sediment sample ST06 was analyzed as a high concentration sample.

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Inorganic Analysis for Sediment Samples Bill's Excavating					
Metals and Cyanide	Sample Location and Number Concentrations in mg/kg				
	ST02 Background	ST03	ST04	ST05	ST06
Aluminum	12100 *	8460 *	9530 *	8720 *	5310
Antimony	26.4 JN	35.3 JN	21.9 JNB	40.5 JN	4.4 U
Arsenic	10.8	12.1	10.1	9.2	9.9 JB
Barium	93.7	103	103	81.5	175
Beryllium	1.0 JB	0.94 JB	0.92 JB	0.83 JB	2.4 UJ
Cadmium	3.5	3.9	5.9	3.7	6.8 U
Calcium	41600	60400	40600	54200	75500
Chromium	63.6 J*	69.9 J*	62.9 J*	46.3 J*	69.6
Cobalt	9.3 B	8.6 B	9.5 B	6.9 B	13.6 UJ
Copper	71.9	86.6	124	71.2	51.5
Iron	23100	24800	24600	21200	35300 J*
Lead	175 *	172 *	194 *	134 *	286
Magnesium	23500	31900	21400	25900	4760
Manganese	500	490	348	459	755 J*
Mercury	0.62 J*	0.73 J*	1.1 J*	1.0 J*	0.77
Nickel	32.0	22.9	28.7	20.1	15.2 UN
Potassium	1650	1000 U	787 B	1890	---
Selenium	1.3 B	1.0 U	1.3 B	0.76 B	6.1 JBE
Silver	1.2 B	1.9 U	1.4 U	1.2 U	8.4 UJE
Sodium	280 B	381 B	288 B	319 B	629
Thallium	0.95 U	1.6 U	1.1 U	1.0 U	90.0 U
Vanadium	29.6	27.5	24.0	25.0	34.0
Zinc	216 JE*	219 JE*	250 *JE	168 JE*	330
Cyanide	0.43 B	0.46 B	0.56 B	0.22 B	---

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Note: Sediment sample ST06 was analyzed as a high concentration sample and was not analyzed for potassium and cyanide.

Volatile Organic Analysis for Residential Well Samples Bill's Excavating			
Volatile Compound	Sample Locations and Number Concentrations in µg/L		
	RW01	RW02 Background	RW03 Background
Chloromethane	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U
Acetone	3 U	28 U	3 U
Carbon Disulfide	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U
2-Butanone	3 U	4 J	3 U
Bromochloromethane	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U
Benzene	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U
Cis-1,3-Dichloropropene	1 U	1 U	1 U
Toluene	1 U	17	1 U
4-Methyl-2-Pentanone	3 U	7	3 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
2-Hexanone	3 U	3 U	3 U
Dibromochloromethane	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U
m &/or p-Xylene	1 U	1 J	1 U
o-Xylene	1 U	1 U	1 U
Styrene	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U
Total Number of TICS *	1	0	0

* Number, not concentrations, of tentatively identified compounds (TICS).

Semivolatile Organic Analysis for Residential Well Samples			
Bill's Excavating			
Semivolatile Compound	Sample Location and Number		
	Concentrations in µg/L		
	RW01	RW02 Background	RW03 Background
Phenol	5 U	5 U	5 U
bis(2-Chloroethyl)Ether	5 U	5 U	5 U
2-Chlorophenol	5 U	5 U	5 U
1,3-Dichlorobenzene	5 U	5 U	5 U
1,4-Dichlorobenzene	5 U	5 U	5 U
Benzyl alcohol	5 U	5 U	5 U
1,2-Dichlorobenzene	5 U	5 U	5 U
2-Methylphenol	5 U	5 U	5 U
Bis(2-Chloroisopropyl)Ether	5 U	5 U	5 U
4-Methylphenol	5 U	5 U	5 U
n-Nitroso-Di-n-Propylamine	5 U	5 U	5 U
Hexachloroethane	5 U	5 U	5 U
Nitrobenzene	5 U	5 U	5 U
Isophrone	5 U	5 U	5 U
2-Nitrophenol	5 U	5 U	5 U
2,4-Dimethylphenol	5 U	5 U	5 U
Benzoic acid	5 U	5 U	5 U
bis(2-Chloroethoxy)Methane	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U
Naphthalene	5 U	5 U	5 U
4-Chloroaniline	5 U	5 U	5 U
Hexachlorobutadiene	5 U	5 U	5 U
4-Chloro-3-Methylphenol	5 U	5 U	5 U
2-Methylnaphthalene	5 U	5 U	5 U
Hexachlorocyclopentadiene	5 U	5 U	5 U
2,4,6-Trichlorophenol	5 U	5 U	5 U
2,4,5-Trichlorophenol	20 U	20 U	20 U
2-Chloronaphthalene	5 U	5 U	5 U
2-Nitroaniline	20 U	20 U	20 U
Dimethyl Phthalate	5 U	5 U	5 U
Acenaphthylene	5 U	5 U	5 U
3-Nitroaniline	20 U	20 U	20 U
Acenaphthene	5 U	5 U	5 U
2,4-Dinitrophenol	20 U	20 U	20 U
4-Nitrophenol	20 U	20 U	20 U
Dibenzofuran	5 U	5 U	5 U
2,6-Dinitrotoluene	5 U	5 U	5 U
2,4-Dinitrotoluene	5 U	5 U	5 U
Diethylphthalate	5 U	5 U	5 U
4-Chlorophenyl-phenylether	5 U	5 U	5 U
Fluorene	5 U	5 U	5 U
4-Nitroaniline	20 U	20 U	20 U

Semivolatile Organic Analysis for Residential Well Samples Bill's Excavating			
Semivolatile Compound	Sample Location and Number Concentrations in ug/L		
	RW01	RW02 Background	RW03 Background
4,6-Dinitro-2-Methylphenol	20 U	20 U	20 U
n-Nitrosodiphenylamine	5 U	5 U	5 U
4-Bromophenyl-phenylether	5 U	5 U	5 U
Hexachlorobenzene	5 U	5 U	5 U
Pentachlorophenol	20 U	20 U	20 U
Phenanthrene	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U
Di-n-butylphthalate	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U
Pyrene	5 U	5 U	5 U
Butylbenzylphthalate	5 U	5 U	5 U
3,3-Dichlorobenzidine	5 U	5 U	5 U
Benzo(a)anthracene	5 U	5 U	5 U
Chrysene	5 U	5 U	5 U
bis(2-Ethylhexyl)phthalate	5 U	5 U	5 U
Di-n-octylphthalate	5 U	5 U	5 U
Benzo(b)Fluoranthene	5 U	5 U	5 U
Benzo(k)Fluoranthene	5 U	5 U	5 U
Benzo(a)Pyrene	5 U	5 U	5 U
Indeno(1,2,3-cd)Pyrene	5 U	5 U	5 U
Dibenzo(a,h)Anthracene	5 U	5 U	5 U
Benzo(g,h,i)Perylene	5 U	5 U	5 U
Total Number of TICs *	0	1	0

* Number, not concentration, of tentatively identified compounds (TICs).

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Semivolatile Organic Analysis for Residential Well Samples Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample RW02		
Background		
Sulfur	20.17	6 J

RW-SVTIC.WK4

Pesticide/PCB Analysis for Monitoring Well Samples Bill's Excavating			
Pesticide/PCB	Sample Locations and Number Concentrations in µg/L		
	RW01	RW02 Background	RW03 Background
Alpha-BHC	0.01 U	0.01 U	0.01 U
Lindane	0.01 U	0.01 U	0.01 U
Heptachlor	0.01 U	0.01 U	0.01 U
Aldrin	0.01 U	0.01 U	0.01 U
Heptachlor Epoxide	0.01 U	0.01 U	0.01 U
Endosulfan I	0.01 U	0.01 U	0.01 U
Dieldrin	0.02 U	0.02 U	0.02 U
Endrin	0.02 U	0.02 U	0.02 U
Endosulfan II	0.02 U	0.02 U	0.02 U
p,p'DDT	0.02 U	0.02 U	0.02 U
Methoxychlor	0.1 U	0.1 U	0.1 U
Beta-BHC	0.01 U	0.01 U	0.01 U
Delta-BHC	0.01 U	0.01 U	0.01 U
Gamma-Chlodane	0.01 U	0.01 U	0.01 U
Alpha-Chlordane	0.01 U	0.01 U	0.01 U
p,p-DDE	0.02 U	0.02 U	0.02 U
p,p-DDD	0.02 U	0.02 U	0.02 U
Endrin Aldehyde	0.02 U	0.02 U	0.02 U
Endosulfan Sykfate	0.02 U	0.02 U	0.02 U
Endrin Ketone	0.02 U	0.02 U	0.02 U
Chlordane, Technical	0.2 U	0.2 U	0.2 U
Toxaphene	1 U	1 U	1 U
Aroclor 1221	0.2 U	0.2 U	0.2 U
Aroclor 1232	0.2 U	0.2 U	0.2 U
Aroclor 1242	0.2 U	0.2 U	0.2 U
Aroclor 1016	0.2 U	0.2 U	0.2 U
Aroclor 1248	0.2 U	0.2 U	0.2 U
Aroclor 1254	0.2 U	0.2 U	0.2 U
Aroclor 1260	0.2 U	0.2 U	0.2 U

RW-PEST.WK4

Inorganic Analysis for Residential Well Samples Bill's Excavating			
Metals and Cyanide	Sample Locations and Number Concentrations in ug/L		
	RW01	RW02 Background	RW03 Background
Aluminum	80 U	80 U	80 U
Antimony	2 U	2 U	2 U
Arsenic	2 U	2 U	2 U
Barium	74	56	36
Beryllium	2 U	2 U	2 U
Cadmium	0.2 U	0.2 U	0.2 U
Calcium	172000	145000	141000
Chromium	10 U	10 U	10 U
Cobalt	6 U	6 U	6 U
Copper	8	7	11
Iron	228	2210	473
Lead	2 U	2 U	2 U
Magnesium	84000	73000	75000
Manganese	67	48	51
Mercury	0.1 U	0.1 U	0.1 U
Nickel	20 U	20 U	20 U
Potassium	5000 U	5000 U	5000 U
Selenium	2 U	2 U	2 U
Silver	6 U	6 U	6 U
Sodium	40000	65000	20000
Thallium	2 U	2 U	2 U
Vanadium	10	8 U	8 U
Zinc	143	59	40 U
Cyanide	5 U	5 U	5 U

RW-METAL.WK4

Volatile Organic Analysis for Waste Samples Bill's Excavating		
Volatile Compound	Sample Locations and Number Concentrations in ug/kg	
	WS02	WS03
Chloromethane	5.0 UJ	10.0 UJ
Bromomethane	5.0 UJ	10.0 UJ
Vinyl Chloride	5.0 UJ	10.0 UJ
Chloroethane	5.0 UJ	10.0 UJ
Methylene Chloride	2.5 UJ	5.0 UJ
Acetone	5.0 UJ	10.0 UJ
Carbon Disulfide	2.5 UJ	5.0 UJ
1,1-Dichloroethene	2.5 UJ	5.0 UJ
1,1-Dichloroethane	2.5 UJ	5.0 UJ
1,2-Dichloroethene (total)	2.5 UJ	5.0 UJ
Chloroform	2.5 UJ	5.0 UJ
1,2-Dichloroethane	2.5 UJ	5.0 UJ
2-Butanone	7 UJB	15 UJB
1,1,1-Trichloroethane	2.5 UJ	5.0 UJ
Carbon Tetrachloride	2.5 UJ	5.0 UJ
Vinyl Acetate	5.0 UJ	5.0 UJ
Bromodichloromethane	2.5 UJ	5.0 UJ
1,2-Dichloropropane	2.5 UJ	5.0 UJ
cis-1,3-Dichloropropene	2.5 UJ	5.0 UJ
Trichloroethene	2.5 UJ	5.0 UJ
Dibromochloromethane	2.5 UJ	5.0 UJ
1,1,2-Trichloroethane	2.5 UJ	5.0 UJ
Benzene	2.5 UJ	47 J
trans-1,3-Dichloropropene	2.5 UJ	5.0 UJ
Bromoform	2.5 UJ	5.0 UJ
4-Methyl-2-Pentanone	5.0 UJ	10.0 UJ
2-Hexanone	5.0 UJ	10.0 UJ
Tetrachloroethene	2.5 UJ	5.0 UJ
1,1,2,2-Tetrachloroethane	2.5 UJ	5.0 UJ
Toluene	2.5 UJ	62 J
Chlorobenzene	2.5 UJ	5.0 UJ
Ethylbenzene	17 UJ	90 JB
Styrene	2.5 UJ	36 J
Xylene (total)	137 UJ	62 J
Total Number of TICs *	9	7

* Number, not concentrations, of tentatively identified compounds (TICs).

WS-VOL WK4

Volatile Organic Analysis for Waste Samples Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg			
Compound Name	Retention Time	Estimated Concentration	
Sample WS02			
Cyclopentane, 1-Methyl-2-propyl	21.400	72	J
Unknown	21.611	43	J
Unknown	22.293	65	J
Cyclohexane, 1-Methyl-2-propyl	22.960	48	J
Decane	23.197	45	J
Nonane, 2,5-Dimethyl-	23.848	72	J
Cyclohexane (2-methyl propyl)	24.357	48	J
Naphthalene, Decahydro; trans	25.196	42	J
Undecane	25.877	49	J
Sample WS03			
Benzene, 1,2,3-Trimethyl	23.800	56	J
Benzofuran	24.272	47	J
1H-Indene	25.547	770	J
2-Propenal, 3-Phenyl	27.147	70	J
1H-Indene, 1-Methyl	28.229	58	J
1H-Indene, 1-Methyl	28.451	59	J
Benzo(b)Thiophene	29.725	150	J

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Extractable Analysis for Waste Samples Bill's Excavating		
Compound	Sample Location and Number Concentrations in µg/kg	
	WS02	WS03
Phenol	20 U	450 D
bis(2-Chloroethyl)Ether	20 U	20 UJ
2-Chlorophenol	20 U	20 U
1,3-Dichlorobenzene	20 U	20 UJ
1,4-Dichlorobenzene	20 U	20 UJ
Benzyl alcohol	20 U	20 U
1,2-Dichlorobenzene	20 U	20 UJ
2-Methylphenol	20 U	290
bis(2-Chloroisopropyl)ether	20 U	20 UJ
4-Methylphenol	20 U	280 D
N-Nitroso-di-n-propylamine	20 U	20 UJ
Hexachloroethane	20 U	20 UJ
Nitrobenzene	20 U	20 UJ
Isophorone	13 J	20 UJ
2-Nitrophenol	20 U	20 UJ
2,4-Dimethylphenol	20 U	370 D
Benzoic acid	37 J	100 U
bis(2-Chloroethoxy)methane	20 U	20 UJ
2,4-Dichlorophenol	20 U	20 UJ
1,2,4-Trichlorobenzene	20 U	20 UJ
Naphthalene	20 U	32000 J
4-Chloroaniline	20 U	20 UJ
Hexachlorobutadiene	20 U	20 UJ
4-Chloro-3-methylphenol	20 U	20 UJ
2-Methylnaphthalene	20 U	5200 JD
Hexachlorocyclopentadiene	20 U	20 UJ
2,4,6-Trichlorophenol	20 U	20 U
2,4,5-Trichlorophenol	100 U	100 U
2-Chloronaphthalene	20 U	20 UJ
2-Nitroaniline	100 U	100 UJ
Dimethylphthalate	19 J	20 UJ
Acenaphthylene	20 U	4900 JD
2,6-Dinitrotoluene	20 U	20 UJ
3-Nitroaniline	100 U	100 UJ
Acenaphthene	20 U	20 UJ
2,4-Dinitrophenol	100 U	100 U
4-Nitrophenol	100 U	100 U
Dibenzofuran	20 U	420 JD
2,4-Dinitrotoluene	20 U	20 UJ
Diethylphthalate	20 U	20 UJ
4-Chlorophenyl-phenylether	20 U	20 UJ
Fluorene	20 U	6000 JD
4-Nitroaniline	100 U	100 UJ
4,6-Dinitro-2-methylphenol	100 U	100 UJ
N-Nitrosodiphenylamine (1)	20 U	20 UJ
4-Bromophenyl-phenylether	20 U	20 UJ
alpha-BHC	20 U	20 U

Extractable Analysis for Waste Samples (Continued)		
Bill's Excavating		
Compound	Sample Location and Number	
	Concentrations in µg/kg	
	WS02	WS03
Hexachlorobenzene	20 U	20 J
beta-BHC	20 U	20 U
Pentachlorophenol	100 U	100 U
gamma-BHC (Lindane)	20 U	20 U
Phenanthrene	20 U	20000 JD
Anthracene	20 U	5700 JD
delta-BHC	20 U	20 U
Heptachlor	20 U	20 U
Aldrin	20 U	20 U
Di-n-butylphthalate	20 U	20 U
Fluoranthene	20 U	13000 JD
Heptachlor epoxide	20 U	20 U
Monochlorobiphenyl	100 U	100 U
Dichlorobiphenyl	100 U	100 U
Trichlorobiphenyl	100 U	100 U
Tetrachlorobiphenyl	100 U	100 U
Pyrene	20 U	8300 JD
gamma-Chlordane	20 U	20 U
Endosulfan I	20 U	20 U
alpha-Chlordane	20 U	20 U
Pentachlorobiphenyl	100 U	100 U
4,4'-DDE	20 U	20 U
Dieldrin	20 U	20 U
Hexachlorobiphenyl	100 UJ	100 UJ
Endrin	20 U	20 U
Endosulfan II	20 U	20 U
4,4'-DDD	20 U	20 U
Heptachlorobiphenyl	100 UJ	100 UJ
Butylbenzylphthalate	20 U	20 UJ
Endosulfan sulfate	20 U	20 U
4,4'-DDT	20 U	20 U
Endrin ketone	20 U	20 U
Benzo(a)anthracene	20 U	4100 JD
Methoxychlor	20 U	20 U
Chrysene	20 U	4300 J
Octachlorobiphenyl	200 U	200 U
3,3'-Dichlorobenzidine	40 U	40 UJ
bis(2-ethylhexyl)phthalate	16 J	20 UJ
Nanochlorobiphenyl	200 U	200 U
Decachlorobiphenyl	200 U	200 U
Di-n-octylphthalate	20 UJ	20 UJ
Benzo(b)fluoranthene	20 UJ	3100 JD
Benzo(k)fluoranthene	20 UJ	2600 JD
Benzo(a)pyrene	20 UJ	3200 JD
Indeno(1,2,3-cd)pyrene	20 UJ	3000 JD
Didbenz(a,h)anthracene	20 UJ	730 JD
Benzo(g,h,i)perylene	20 UJ	2700 JD
Total Number of TICs	20	20

EXTR-WS.WK4

Extractable Analysis for Waste Samples Tentatively Identified Compounds Bill's Excavating Concentrations in ug/kg		
Compound Name	Retention Time	Estimated Concentration
Sample WS02		
Unknown C10 Alkane	11.205	80 J
Unknown C11 Alkane	11.808	72 J
Unknown Hydrocarbon	12.903	27 J
Undecane	13.849	100 JN
Octanoic acid	16.284	44 JN
Nonanoic acid	18.628	200 JN
Tetradecane	20.848	63 JN
Pentadecane	22.931	88 JN
Unknown	25.055	190 J
Nonanedioic acid	26.766	230 JN
(1,1'-Biphenyl)-2-ol	27.372	330 JN
Tetradecanoic acid	28.122	33 JN
Unknown	28.466	180 J
Unknown	30.635	200 J
Hexadecanoic acid	31.478	1700 JN
Unknown	32.557	84 J
Unknown	32.944	280 J
Octadecanoic acid	33.179	640 JN
Unknown	33.393	100 J
Unknown	34.434	77 J
Sample WS03		
1H-Indene	12.488	320 JN
1H-Indene, 1-methyl-	15.221	50 JN
Benzo(b)thiophene	16.730	98 JN
Isoquinoline	17.435	120 JN
Naphthalene, 1-methyl-	19.237	310 JN
1,1'-Biphenyl	20.629	220 JN
Naphthalene, 1,5-dimethyl	21.184	170 JN
Naphthalene, 1,3-dimethyl	21.497	160 JN
Unknown PAH	25.638	160 N
Unknown PAH	25.780	100 N
Methyl dibenzofuran	25.922	140 N
9H-Carbazole	29.850	50 JN
Anthracene, 2-methyl-	30.478	72 JN
Phenanthrene, 4-methyl-	30.600	92 JN
4H-Cyclopenta(def)phenanthr	30.863	130 JN
Naphthalene, 2-phenyl-	31.401	58 JN
Benzo(b)naphtho(2,3,-d)furan	33.198	23 JN
Pyrene, 1-methyl-	33.686	67 JN
Benzo(b)naphtho(1,2-d)thiop	34.847	18 JN
Unknown PAH	34.918	24 N

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Toxaphene and Arochlors Analysis for Waste Samples Bill's Excavating Concentrations in ug/kg	
Compound Name	Concentration
Sample WS02	
Toxaphene	50 U
Arochlor-1016	10 U
Arochlor-1221	10 U
Arochlor-1232	10 U
Arochlor-1242	10 U
Arochlor-1248	10 U
Arochlor-1254	10 U
Arochlor-1260	10 U
Sample WS03	
Toxaphene	50 U
Arochlor-1016	10 U
Arochlor-1221	10 U
Arochlor-1232	10 U
Arochlor-1242	10 U
Arochlor-1248	10 U
Arochlor-1254	10 U
Arochlor-1260	10 U

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Inorganic Analysis for Waste Samples		
Bill's Excavating		
Metals and Cyanide	Sample Location and Number	
	Concentrations in mg/kg	
	WS02	WS03
Aluminum	2140 J*	6330
Antimony	4.4 U	4.4 U
Arsenic	2.1 U	46.7
Barium	36.4 B	96.1
Beryllium	2.40 UJ	2.4 UJ
Cadmium	12.7 *	6.8 U
Calcium	1590	6900 J*
Chromium	6.80 UJN	17.7 JN
Cobalt	107 J	13.6 UJ
Copper	25.4 JB	22.3 B
Iron	2760 J*	18000 J*
Lead	69.6	237
Magnesium	565	3440
Manganese	35.6 J*	173 J
Mercury	0.03 U	0.16 B
Nickel	15.2 U	15.2 UN
Selenium	4.2 JBE	7.40 JBE
Silver	8.40 RUEN	8.4 UJEN
Sodium	636	884
Thallium	90.0 U	90.0 U
Vanadium	6.40 U	23.2
Zinc	21.8 JN	193

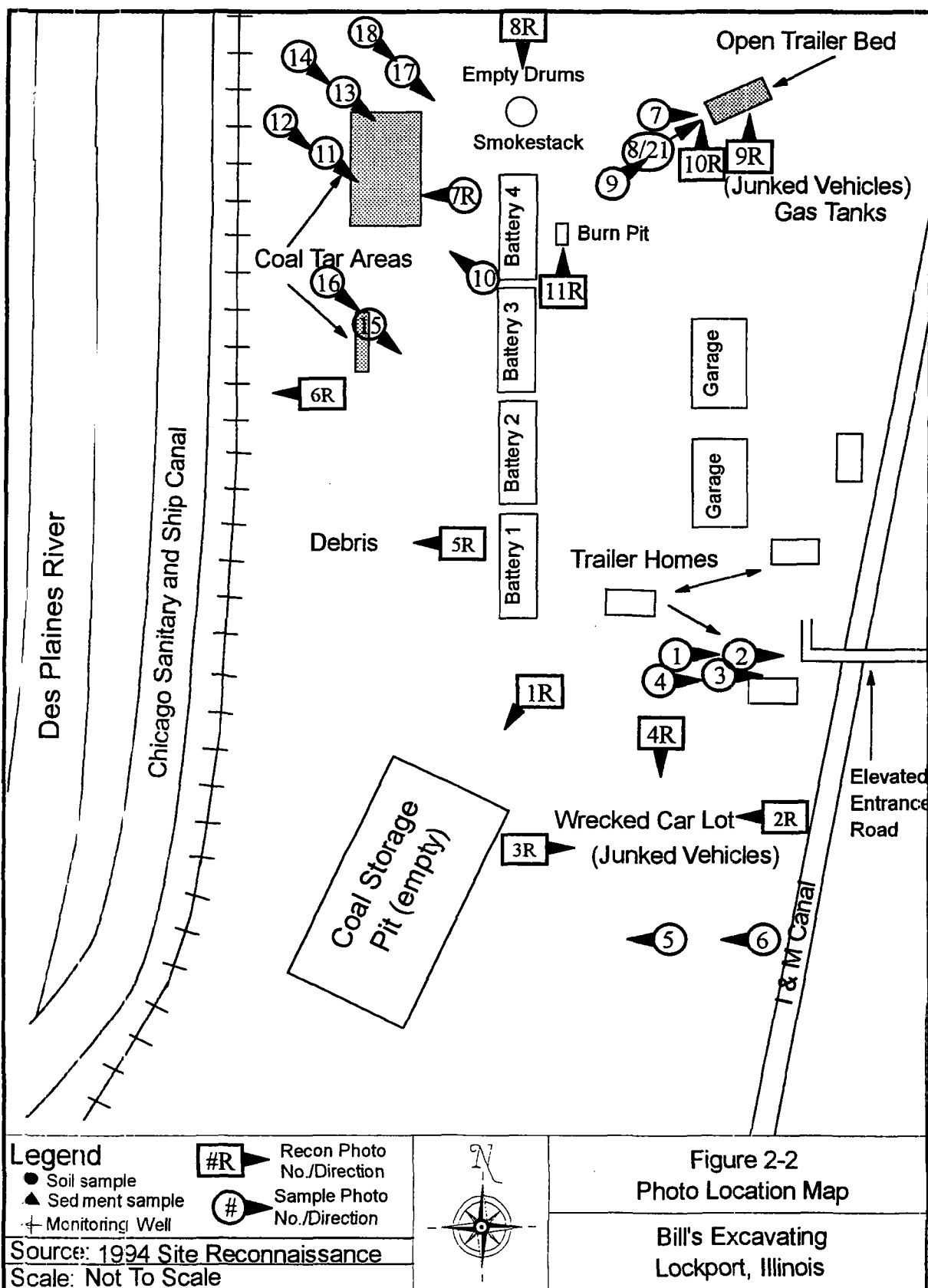
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Appendix D

Bill's Excavating

Site Photographs

NOTE: Sample photos 19 and 20 taken offsite; facing northeast, depicting sample location SS12.



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Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 1 Photo #: 1R
Date: 5-12-94 Time: 0945
Description: Reconnaissance photo, taken
facing southwest showing an
old coal storage area.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 1 Photo #: 2R
Date: 5-12-94 Time: 1000
Description: Reconnaissance photo taken
facing west; shows an area
where fill was eroded, making
it possible to view buried ties
and coal/coal ash.



Site: Bill's Excavating Site
Proj. #: 71280
Roll: 1 Photo #: 3R
Date: 5-12-94 Time: 1015
Description: Reconnaissance photo taken facing east, while standing along a path through junk yard, shows junked vehicles with the site's elevated main entrance road in background.



Site: Bill's Excavating Site
Proj. #: 71280
Roll: 1 Photo #: 4R
Date: 5-12-94 Time: 1016
Description: Reconnaissance photo taken facing south, showing junked vehicles in the junk yard area.



Site: Bill's Excavating Site

Proj. #: 71280.121

Roll: 1

Photo #: 5R

Date: 5-12-94

Time: 1030

Description: Reconnaissance photo taken facing west, showing a concrete foundation with old rusty farm equipment.



Site: Bill's Excavating Site

Proj. #: 71280.121

Roll: 1

Photo #: 6R

Date: 5-12-94

Time: 1045

Description: Reconnaissance photo taken facing west, showing coal tar-like material layered over a concrete riser/foundation and concrete slabs/debris.



D-4

Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 1 Photo #: 7R
Date: 5-12-94 Time: 1055
Description: Reconnaissance photo taken facing west, showing exposed coal tar and other debris in a graded (leveled) area.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 1 Photo #: 8R
Date: 5-12-94 Time: 1115
Description: Reconnaissance photo taken facing south, showing rusty drums piled up on a ceramic tile pad, north of the onsite smokestack.



D-5

Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 1 Photo #: 9R
Date: 5-12-94 Time: 1120
Description: Reconnaissance photo, taken facing north, showing an open trailer filled with numerous rusty drums.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 1 Photo #: 10R
Date: 5-12-94 Time: 1125
Description: Reconnaissance photo, taken facing north, showing crusted resinous material on the top of a drum in the trailer.



D-6

Site: Bill's Excavating Site

Proj. #: 71280.121

Roll: 1

Photo #: 11R

Date: 5-12-94

Time: 1130

Description: Reconnaissance photo taken facing north, showing a solid waste burning pit found onsite, near battery 4.



Site: Bill's Excavating Site

Proj. #: 71280.121

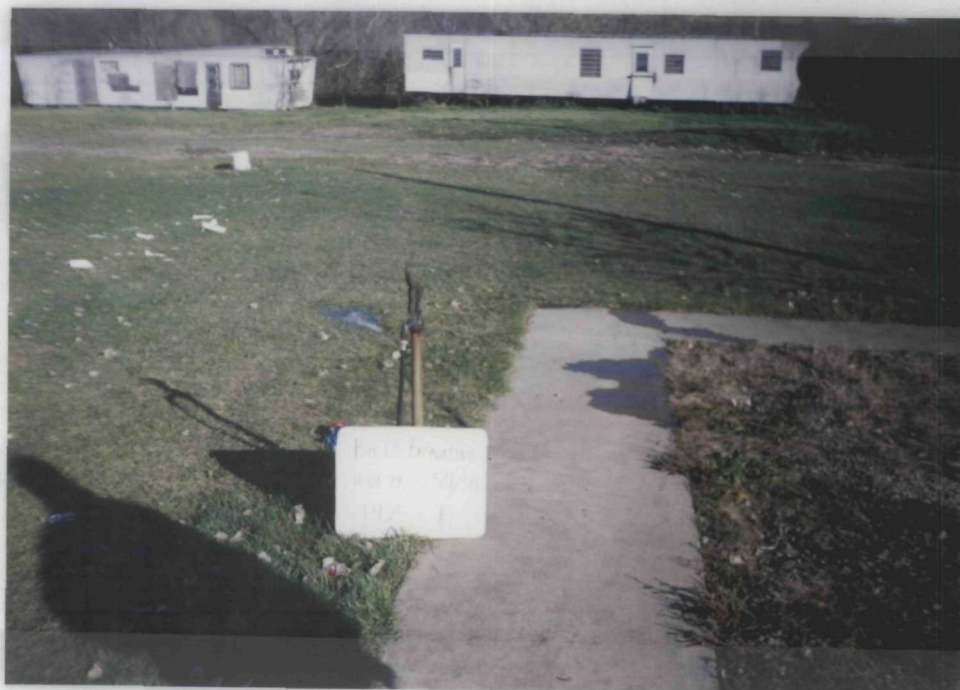
Roll: 2

Photo #: 1

Date: 11-07-94

Time: 1425

Description: Photo taken facing east, showing the onsite well where groundwater sample RW01 was collected.



D-7

Site: Bill's Excavating Site

Proj. #: 71280.121

Roll: 2

Photo #: 2

Date: 11-07-94

Time: 1426

Description: Photo was taken facing east; a close-up showing the onsite well where sample RW01 was collected.



Site: Bill's Excavating Site

Proj. #: 71280.121

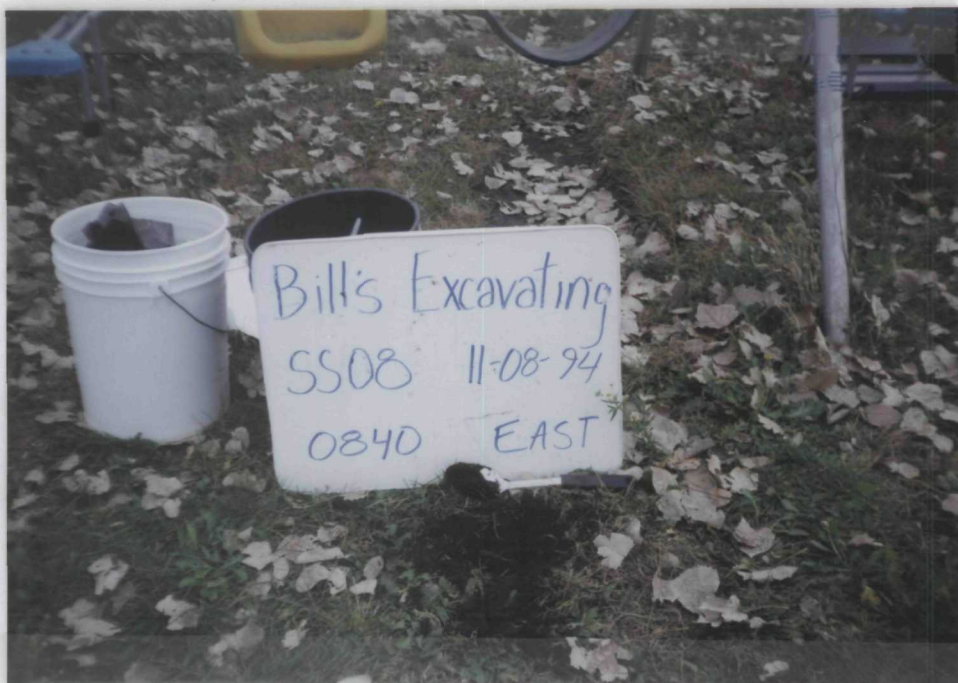
Roll: 2

Photo #: 3

Date: 11-08-94

Time: 0840

Description: Photo taken facing east, close-up showing the SS08 soil sampling location.

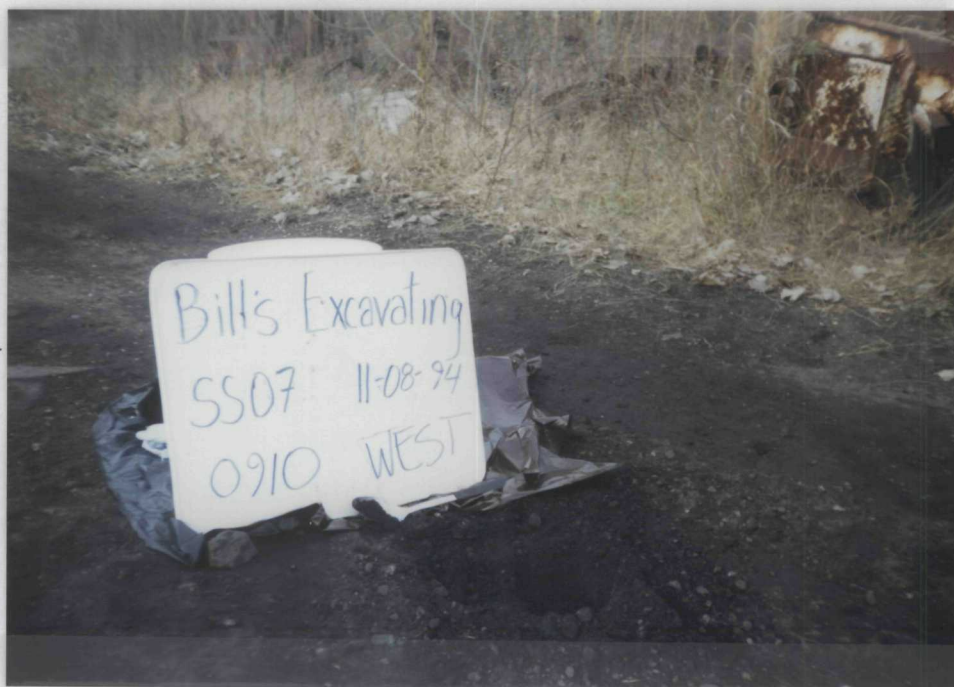


D-8

Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 4
Date: 11-08-94 Time: 0841
Description: Photo taken facing east,
showing the area with a
children's swing set where soil
sample SS08 was collected.



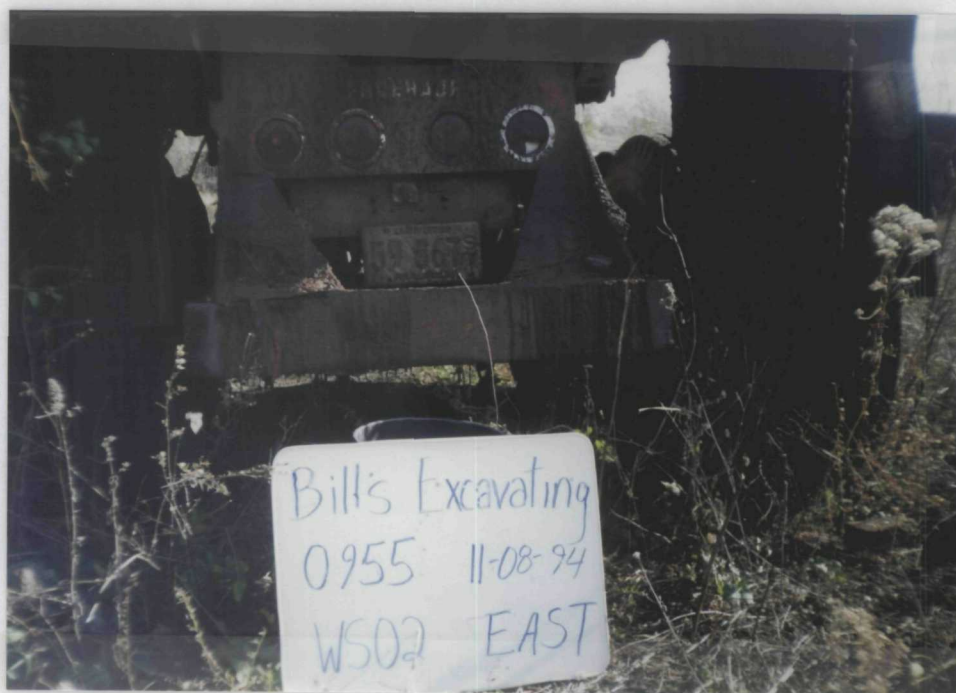
Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 5
Date: 11-08-94 Time: 0910
Description: Photo taken facing west, close-
up showing the SS07 sampling
point.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 6
Date: 11-08-94 Time: 0911
Description: Photo was taken facing west,
showing the dirt and gravel
road where sample SS07 was
collected.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 7
Date: 11-08-94 Time: 0955
Description: Photo was taken facing east,
showing the trailer where waste
source sample WS02 was
collected.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 8
Date: 11-08-94 Time: 0956
Description: Photo was taken facing
northeast, showing the back
end of the trailer where waste
source sample WS02 was
collected.



Site: Bill's Excavating Site
Proj. #: 71280
Roll: 2 Photo #: 9
Date: 11-08-94 Time: 0957
Description: Photo was taken facing
northeast, showing the area
where the trailer with drums is
located and sample WS02 was
collected.



D-11

Site: Bill's Excavating Site

Proj. #: 71280

Roll: 2

Photo #: 10

Date: 11-08-94

Time: 1029

Description: Photo taken facing northwest, showing a dump truck dumping fill material to cover the coal tar-contaminated area in the northwest section of the site.



Site: Bill's Excavating Site

Proj. #: 71280.121

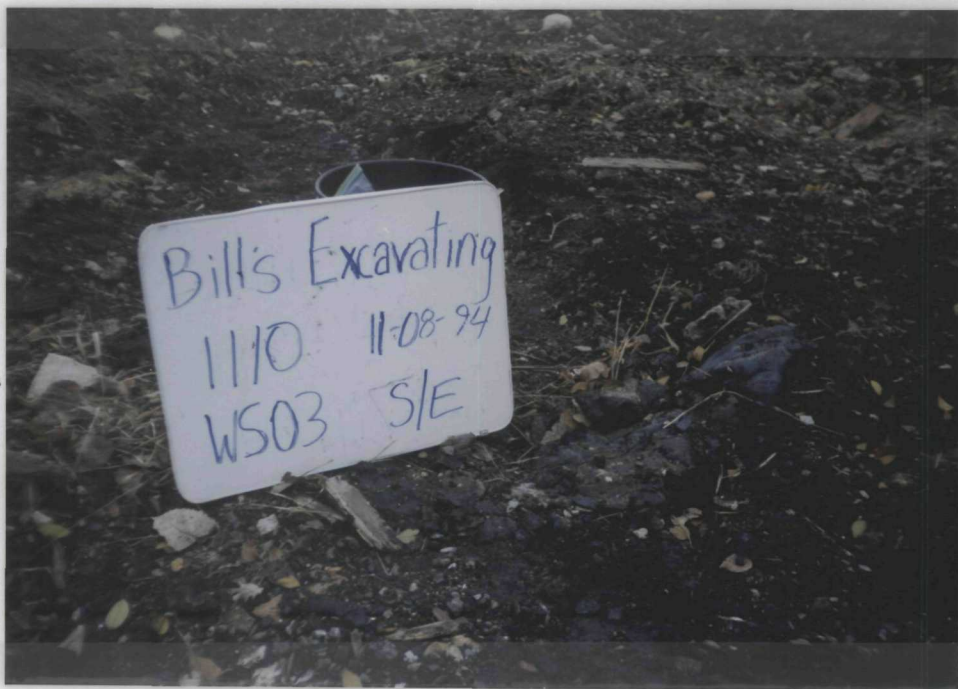
Roll: 2

Photo #: 11

Date: 11-08-94

Time: 1110

Description: Photo taken facing southeast, close-up showing spot where waste source sample WS03 was collected.

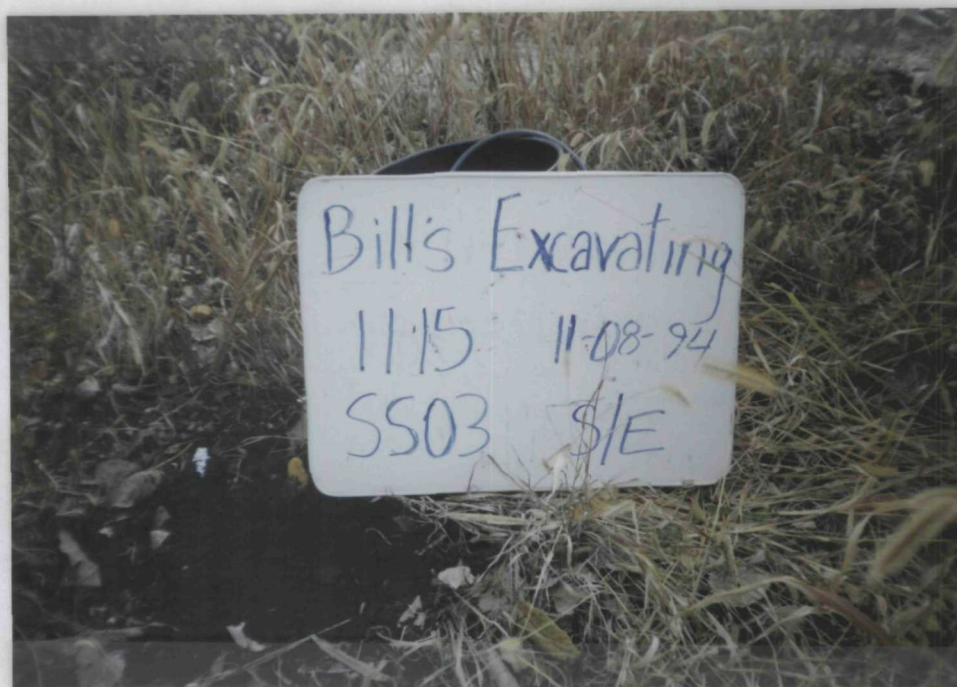


D-12

Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 12
Date: 11-08-94 Time: 1111
Description: Photo taken facing southeast,
showing the area where waste
source sample WS03 was
collected.



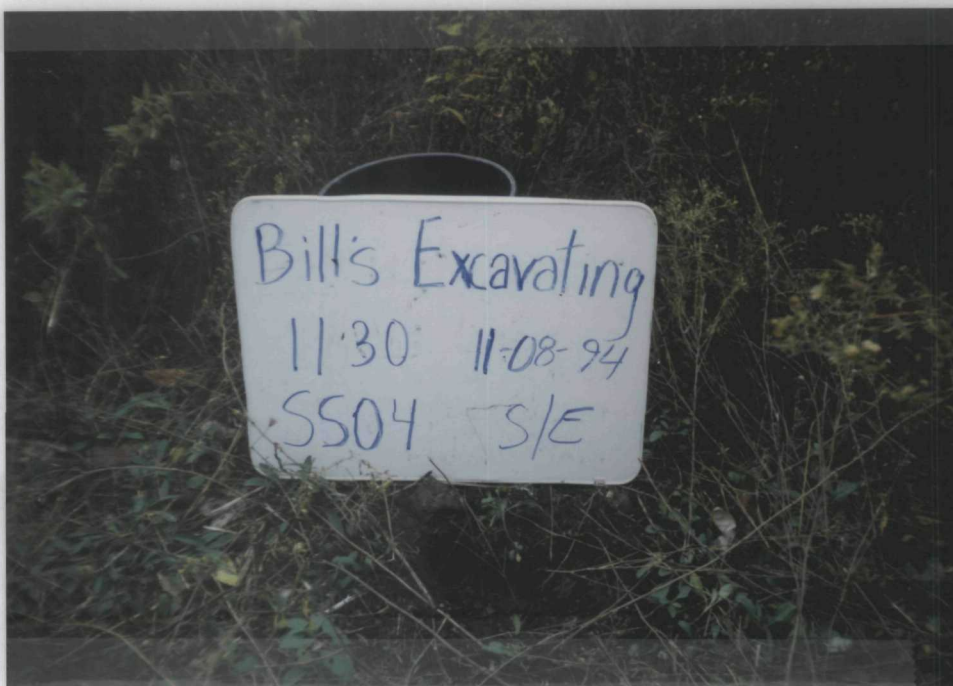
Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 13
Date: 11-08-94 Time: 1115
Description: Photo taken facing southeast,
close-up of the SS03 soil
sample location.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 14
Date: 11-08-94 Time: 1116
Description: Photo taken facing southeast,
showing the area where soil
sample SS03 was collected.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 15
Date: 11-08-94 Time: 1130
Description: Photo taken facing southeast,
showing a close-up of the soil
sample SS04 sampling spot.

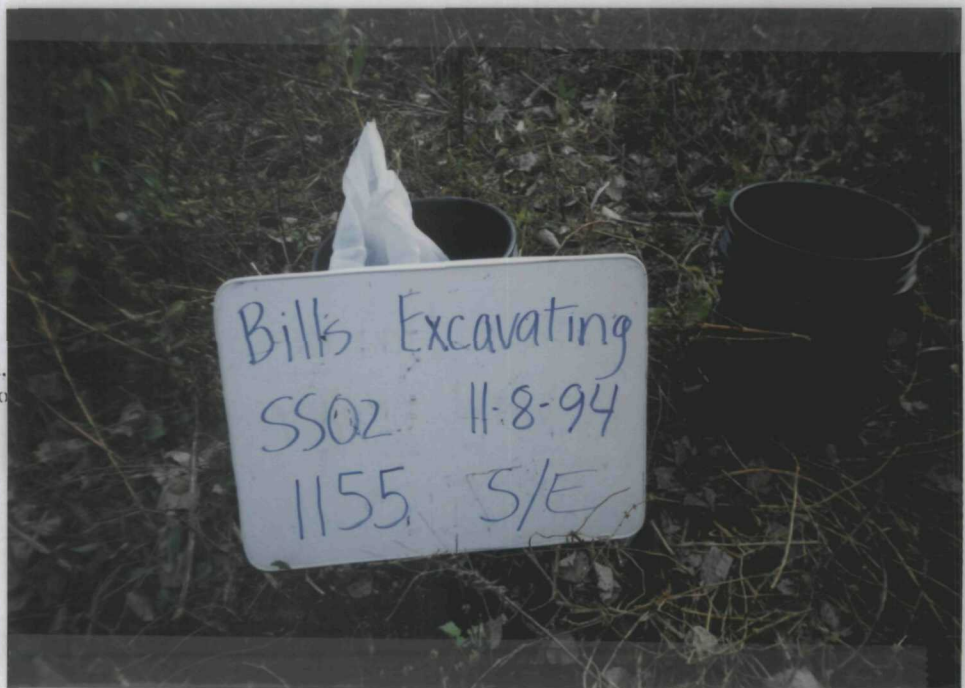


D-14

Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 16
Date: 11-08-94 Time: 1131
Description: Photo taken facing southeast,
showing the area where SS04
was collected.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 17
Date: 11-08-94 Time: 1155
Description: Photo taken facing southeast,
showing a close-up of the spot
where soil sample SS02 was
collected.



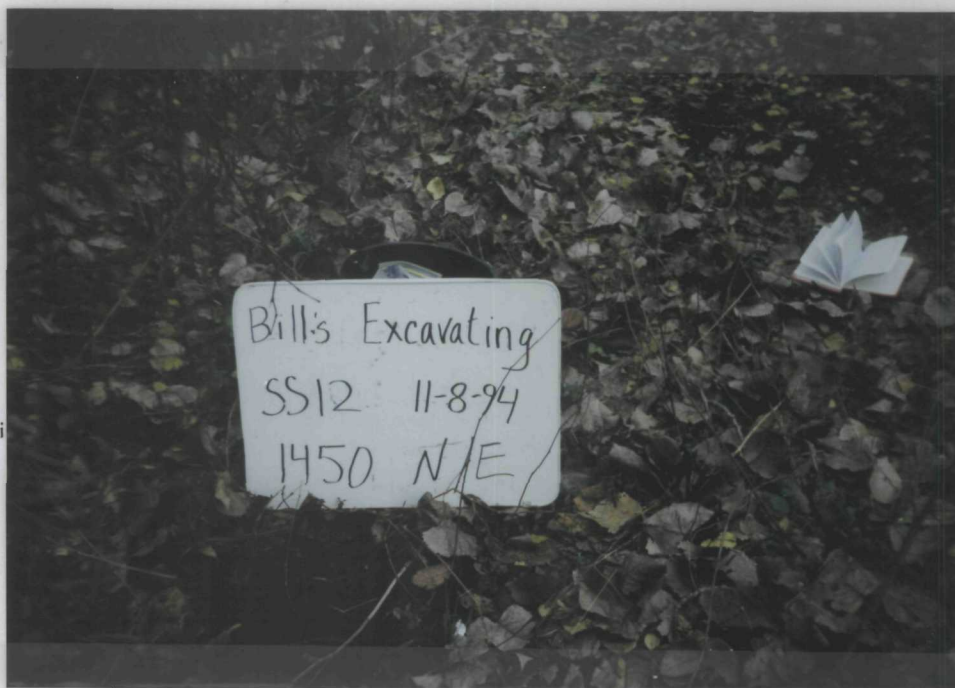
D-15

D-15

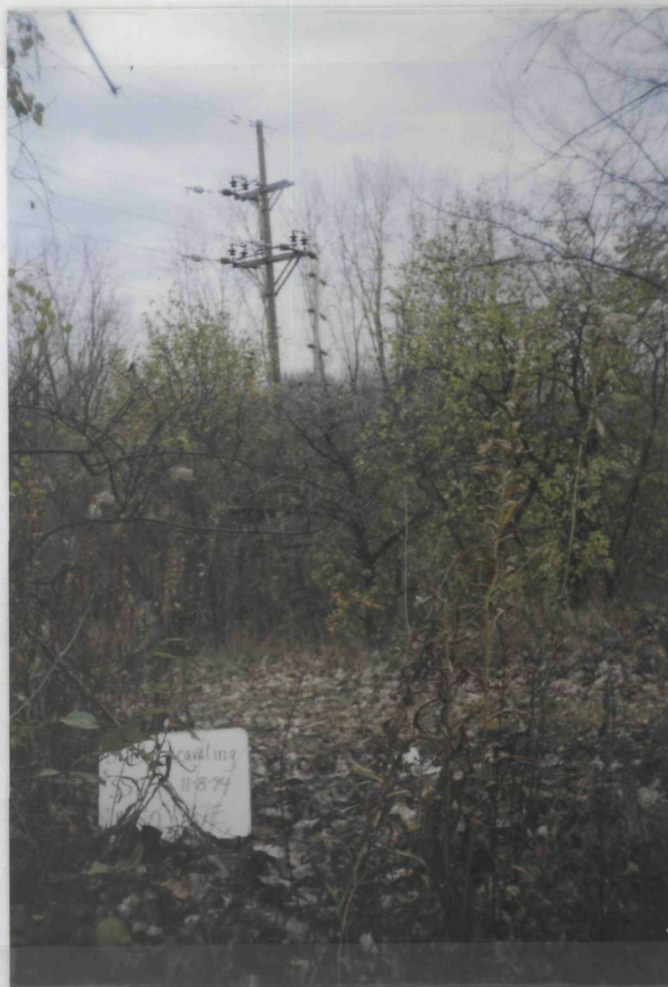
Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 18
Date: 11-08-94 Time: 1156
Description: Photo taken facing southeast,
showing the area where SS02
was collected.



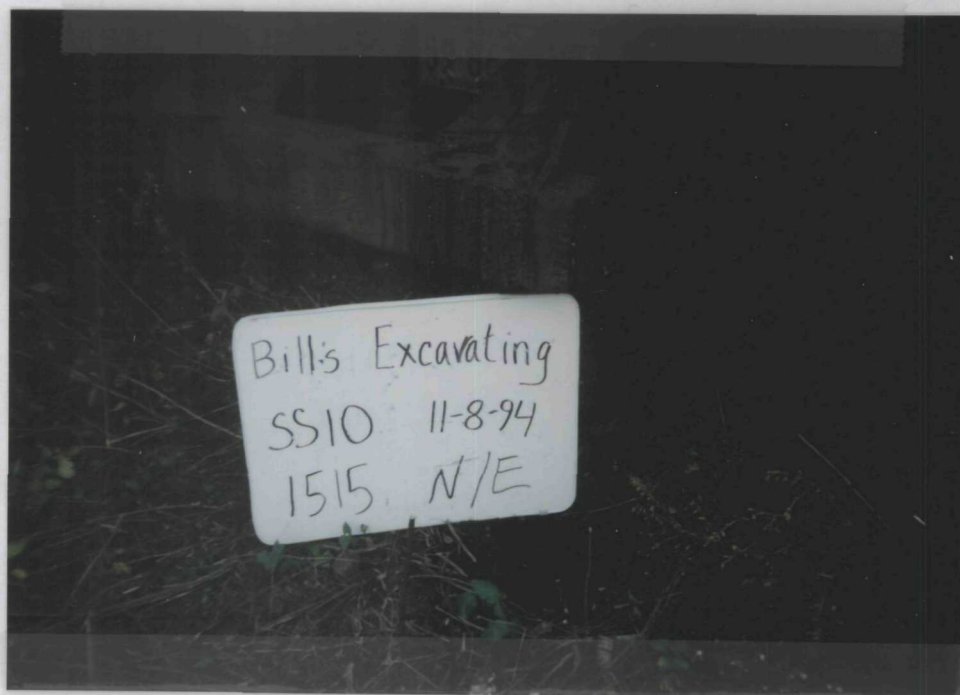
Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 19
Date: 11-08-94 Time: 1450
Description: Photo taken facing northeast,
close-up of the spot where soil
sample SS12 was collected.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 20
Date: 11-08-94 Time: 1451
Description: Photo taken facing northeast,
showing the wooded area
where soil sample SS12 was
collected.



Site: Bill's Excavating Site
Proj. #: 71280.121
Roll: 2 Photo #: 21
Date: 11-08-94 Time: 1515
Description: Photo taken facing northeast,
showing the spot behind the
open trailer where soil sample
SS10 was collected.



D-17